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# AUTOMOTIVE INDUSTRIES

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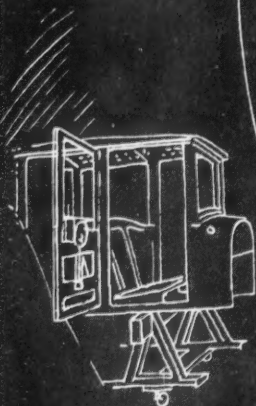
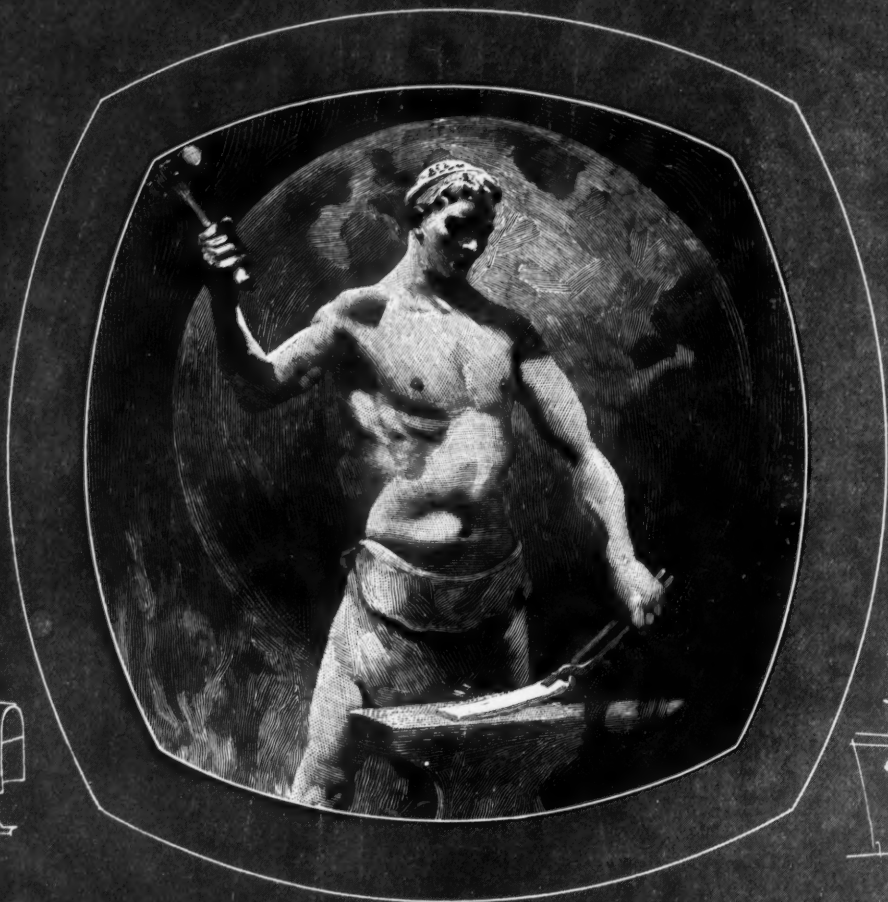
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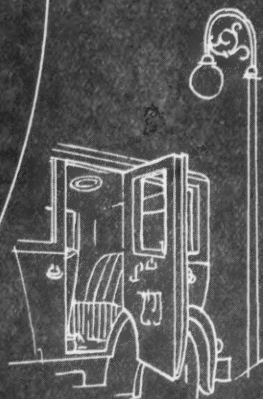
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# AUTOMOTIVE INDUSTRIES

*The* AUTOMOBILE

VOL. 52

NEW YORK—THURSDAY, JANUARY 8, 1925

No. 2

## Smart Bodies with Dazzling Colors at Silver Jubilee Show

Trade Days successful. Remarkable progress in body design.

By Norman G. Shidle

**S**TAGED in a riot of color and rich in decorative beauties, the 25th New York Automobile Show, celebrating the Silver Anniversary of the industry, opened its doors to the trade Friday morning, Jan. 2 and to the public on Saturday evening, Jan. 3. Out of the dazzling panorama of architectural and vehicular art work which greeted the eye of the visitor as he entered the big Bronx armory where the exhibit is being held for the second time, gradually appeared four outstanding features:

1. The body work at this show had more beauty of line and variety of color than in any previous year. Marked progress toward making bodies more appealing to the eye was in evidence at almost every booth.

2. The background of the show itself exceeded in effectiveness even the unusually brilliant decorations which featured the 1924 exhibition and provided a fitting stage upon which to present the products of a quarter of a century of automotive development.

3. Progress has been made in chassis and engine design but developments were not nearly so spectacular as in bodies.

4. An unusually large number of new models were shown to the public for the first time.

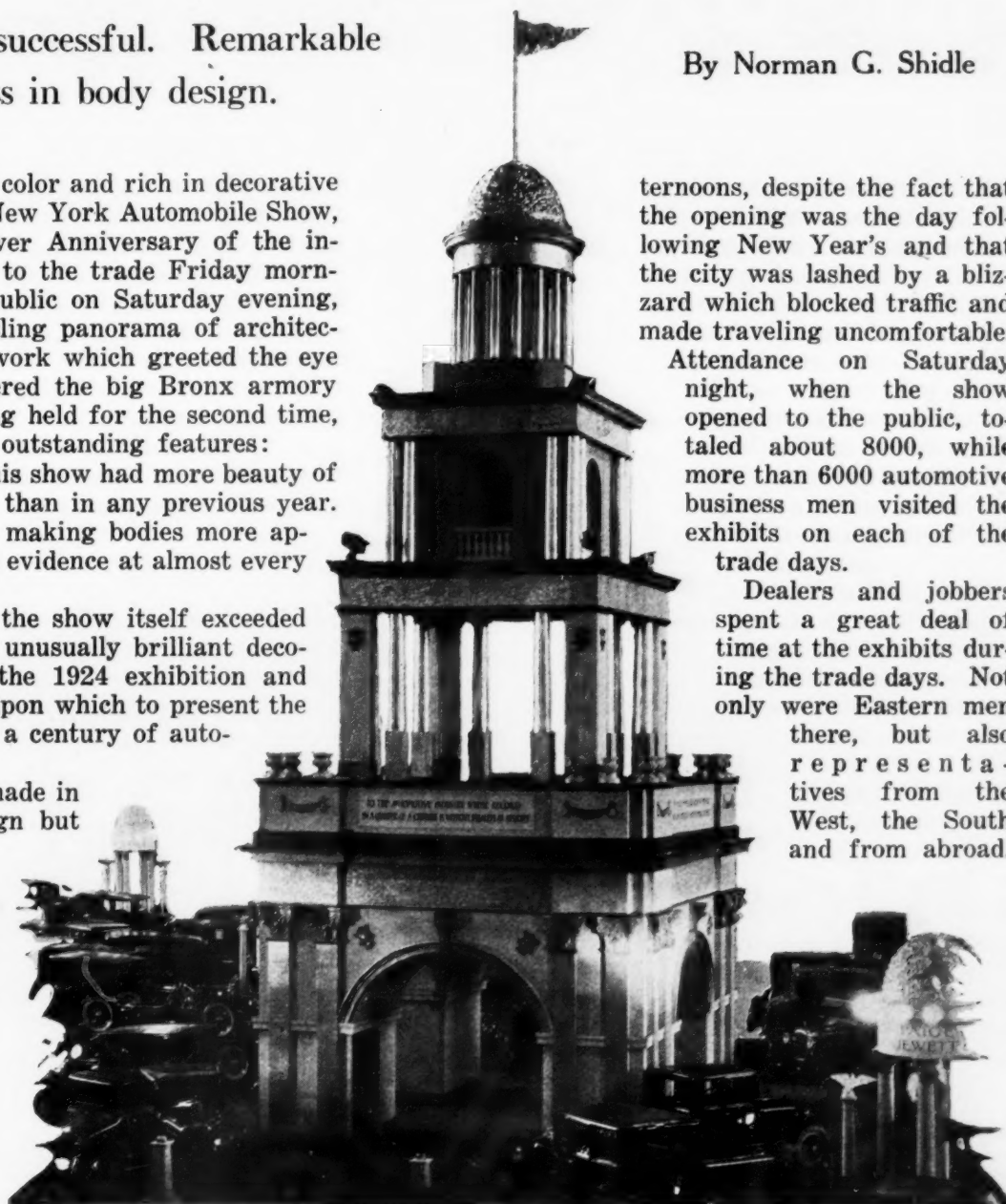
The trade days' experiment was a success.

Good crowds visited the show both of Friday and Saturday af-

ternoons, despite the fact that the opening was the day following New Year's and that the city was lashed by a blizzard which blocked traffic and made traveling uncomfortable.

Attendance on Saturday night, when the show opened to the public, totaled about 8000, while more than 6000 automotive business men visited the exhibits on each of the trade days.

Dealers and jobbers spent a great deal of time at the exhibits during the trade days. Not only were Eastern men there, but also representatives from the West, the South and from abroad.





*Perhaps the greatest majority of the cars shown at the annual exhibit in New York pression left is one of color and warmth and an expression of personality and*

Many engineers and technical men from the car and truck factories took advantage of the opportunity offered to examine the parts and accessory displays without interference from a large crowd. Exhibitors in the accessory sections nearly all are satisfied with the experiment. One carburetor booth, for example, reported interviews with fourteen passenger car engineers on the first day, while similar interest was manifested in many other lines.

Aside from the technical men, however, factory executives in general did not spend as much time at the Armory during the trade days as they might have. A few organizations turned out en masse and spent the whole of the first day going through the show in detail and talking with dealers who came to their booths. A number of executives stepped into the show during trade days for an hour or so, but by and large they were not there in great numbers.

#### Salesmen and the Trade Days

The passenger car booths were well manned with salesmen by the time the public came into the show on Saturday night, but up to then representation was inadequate in most instances. A few companies had able men at their exhibits throughout the trade days; a fair number had somebody there a good part of the time, and one or two companies left their booths without anyone at all in charge until Saturday night.

Obviously these latter groups did not get the full benefit of the trade days. Some unfavorable comment resulted among dealers who were trying to find out something about the cars.

Both car and parts executives, however, seemed pleased with the result of the trade days. One prominent car executive said on Saturday afternoon, "The trade days have been a distinct success. Our company, along with some others, did not take them seri-

ously enough this first time, but as time goes on I look for them to grow in importance and value."

S. A. Miles, N. A. C. C. Show Manager, and Neal G. Adair, M. A. M. A. Show Manager, both are enthusiastic about the results of the experiment, and Mr. Miles is sponsor for the statement that "Trade days will be a feature of future automobile shows."

New car models shown, in addition to those described in AUTOMOTIVE INDUSTRIES of Jan. 1, include a new Cleveland Six; a Junior Eight and a Junior Six in the Locomobile booth; a refined Mercer chassis; a new four-cylinder Auburn; a Peerless roadster; a Studebaker coach; Maxwell special sedan; Jordan 7-passenger sedan; three new Pierce-Arrow body models; a Reo sport roadster; Davis sedan; two new Velie bodies; two new Flint models; a lighter Stanley Steamer; a six-cylinder Gardner; new six-cylinder DuPont; a Lexington special sedan; a Marmon 7-passenger sedan; Moon roadster and cabriolet; Stearns-Knight sport coupe and sport brougham; Nash 4-passenger Victoria and 2-door sedan and Stutz 4-passenger coupe.

A new car called the Barbarino was shown at the Hotel Commodore.

A number of sales were recorded on the night of the public opening, while the trade days resulted in considerable buying, particularly at the parts and accessory exhibits.

#### Price Changes Frequent

Price changes are in the air and considerable activity along this line before the end of the show will not be surprising. Peerless announced a cut of about \$400 on the opening day, while Oldsmobile and Aperson increased their lists. There is a general feeling that no good economic reason exists for price cuts at this time, but the keenness of competition in





were conservative or de luxe models of open and closed cars for the family, yet the im-  
taste. The effects of line and color might well be those of custom body makers

certain price groups is so great that executives for the most part are saying little and hoping that nothing will happen. The increases announced by a few companies may tend to steady the price situation which was disturbed somewhat as the show opened by important decreases which had been announced the day before. At least one cut in a low-priced line seems certain before the end of the week. The new Studebaker coach is priced on a level with the Buick coach, however, which indicates a tendency to hold prices steady in this class.

#### 1925 to Be a Good Year

The success of the trade days and the public interest in the Silver Anniversary Show have generated a feeling of confidence among factory executives. The sales manager for one low-priced car sees a large increase in production ahead for 1925, although the general opinion seems to be that volume of production will about equal or only slightly exceed that of 1924.

The unusual advances in body design unquestionably are the big feature of the show. Never before has there appeared such variety of colors, such grace of lines and such refinement of appointments outside of a salon of custom-built jobs. The progress exhibited is not confined to a few lines nor to a single price class. All over the show are evidences that the body engineer is coming into his own.

Naturally the most unusual and bizarre effects in painting and striping are to be found among the smaller manufacturers who are striving for a place in the sun by appealing to the man who wants something different. Perhaps, conservative good taste has been overreached in search for the unique in one or two instances, but for the most part the unusual color combinations have been blended with harmony and dignity. Good examples of this sort of coachwork are

found in the Auburn, Davis, Stutz and other models.

But the production companies have not been behind. Examples of graceful lines, designed to intrigue the artistic sense and of duo-color finishes, reflecting a pleasing variety to the eye, are to be found in nearly every exhibit. No longer do one or two snappy, smart body jobs stand out above the rest. The whole industry has become body-conscious. As one car executive put it, "the old hearses are on the way out."

Of the total of 144 closed cars of 4-5 passenger capacity, 26 were of the coach type. Eighteen of these were called coaches by the manufacturer and 8 were called by different names, such as Brougham, Coach-Brougham, Club Coupe, 2-door Sedan, etc.

Chassis changes have not been radical, but general improvement has taken place all along the line. Frames are being made stiffer than ever before, single plate clutches are gaining in popularity, accessibility for service is better than in previous years, and four-wheel brakes now are in a transition stage.

The showing of a full dozen eight-in-line engines was the chief feature of the show from an engine design standpoint. Cylinders are being cast integral with the upper part of the crankcase in more instances than heretofore, husky crankshafts have become the rule rather than the exception, and forced feed lubrication has become universal except on the lowest priced cars.

Particular interest in exports was evidenced at the show this year. Not only did a Mexican automotive mission officially visit the exhibits, but also Tuesday, Jan. 6, was set aside as a special Automotive Export Day. Accessory makers report that a number of foreign jobbers visited the show during trade days and that new connections were established in several instances.

# Pastel Shades and Graceful Lines Add Charm to New Body Models

*Striking roadsters and sport coupes with rumble seats and space for golf sticks, guns, etc., win approval of the crowd at the show. Closed cars predominate. Two tone color effects.*

L. Clayton Hill

**N**OTABLE progress in artistry of line and form; a distinct trend toward bright colors and two-tone paint schemes; greatly improved finish of both the exterior and interior of bodies; the dominance of the closed body. These are the outstanding general impressions of the 1925 Automobile Show when seen through the eyes of the body engineer.

Improved appearance is the keynote of the collective exhibit. Strolling through the aisles in the rôle of eavesdropper one finds that bodies and "good-looks" are the most popular topics of conversation. Chassis and engine changes, some of them novel and significant, seem to be matters of secondary importance. The running gear of the modern motor vehicle has reached such a high state of perfection as to concentrate engineering thought, for the present at least, on the body and general appearance of the car.

We are entering the era of better-looking automobiles! There is little of the bizarre in the new bodies. One may characterize their appearance as striking, but the new lines are pleasing as well as impressive. Freaks and sensations are lacking.

Tasteful employment of bright colors and the general adoption of artistic and harmonious lines—these are responsible for the general approval given the latest body creations. They possess an uncommon grace and delicacy of form. There is more of the elegance and style of the custom-built bodies in their makeup, and less of the straight-edge, French-curve characteristics of the past output of the production shops. As a general rule, they do not look die-stamped and hard. They please the eye.

## Sense Public Approval of Chrysler Lines

Body designers have been quick to sense the public approval given the lines of the Chrysler car and they have endeavored to cater to this demand.

The characteristic points of design which seem to be in vogue are: a low roof line, with considerable down sweep toward the front; windshield visor which is integral with the roof and carries the roof line through without a break; double belt-moldings which form a panel between them, the lower molding being carried forward to the radiator; two-color paint schemes divided at the belt; and nickel-plated radiator with considerably rounded top tank. These are the earmarks of many new models.

New bodies on the following chassis possess most, if not all, of the above characteristics: Cleveland, Gardner, Hupmobile, Jewett, Overland, Locomobile Junior models and the Willys-Knight. Packard and Peerless are noted as swinging away from the double belt molding.

Auburn has achieved considerable novelty by using a

raised panel on the hood. This panel is several inches wide at radiator and is swept backward and downward across hood, side panels and cowl. The panel and part of body are painted in one color, while the lower forward portions of the hood, which have slanting louvers, are in another contrasting color. This is the first American production car to use this arrangement, though it has been seen on bodies at the last two Salon Shows.

The Silver Anniversary Show is a closed-car show; there are more closed bodies on display than ever before. Ten exhibitors have no open cars in their booths. This list includes such large producers as Buick, Cadillac, Essex, Hudson, Overland, Paige, Marmon, Nash and Willys-Knight. No open bodies will be built for the new Overland Six.

## Is the Open Car Becoming a Luxury?

Of the open cars shown, the sport roadster is by far the predominant type. Can this mean that the open car is becoming a luxury?

Will the inclosed car become the utility vehicle and the backbone of automobile transportation, relegating the open car to that class of sport vehicles intended only for occasional use? It would seem so. Nearly every roadster at the show is painted in brilliant colors, upholstered luxuriously, and shown with top stowed or left off entirely. These are fair-weather vehicles, built for play.

The same characteristics are apparent in many of the open phaetons. Where the sporting theme is not embodied in the design, one finds that tops are permanent and curtains are made to give adequate protection in bad weather.

These models are virtually closed cars, and it is generally the case that they are built to meet the demand for closed-car protection at open-car price. They appear to be a transitory step, particularly since many makers now provide closed models which are priced the same as their open ones.

There are indications that the open car of the future will be a pleasure vehicle solely, built in relatively small quantities and distinctive in appearance. Tops will be folded a greater part of the time, the body will be low, and the lines will be indicative of speed. It will be an open-air car for the sportsman.

In general, closed cars have larger doors and windows than ever before. The wide doors make it much easier to get into and out of the closed bodies. The windows provide open-car vision. No doubt the improvement in window regulators has been an influence here.

Several Fisher bodies have overhead doorchecks, consisting of a flat bar of steel, one end of which is attached to the top rail of the door frame, while the other end slides in a metal fitting let into the top of door.



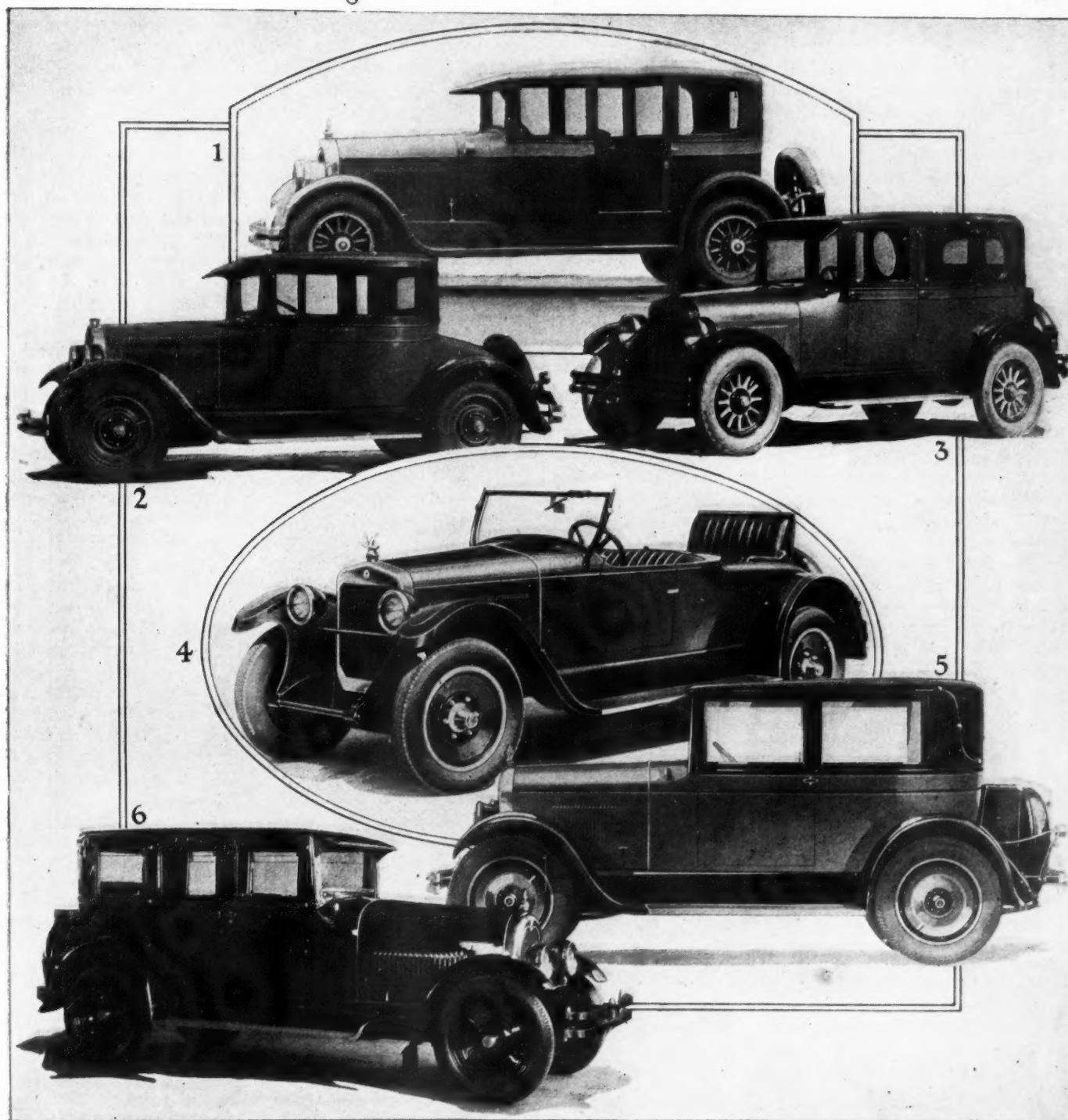
This is an inexpensive device and one which is not apt to come loose as some other forms of doorchecks do.

Judging by the interest taken in the exhibits at the show, the four-passenger coach makes the greatest appeal to public fancy. Price has a good deal to do with this popularity, since nearly all coach models can be purchased for the same price as the open models. Naturally the coach influence is responsible for the extremely wide doors, some of them mounted on four exposed hinges, and for the wide rear quarter windows. Some

doors are so wide that one almost appears to swing out the entire body side as the door is opened.

There is nothing particularly unique about any given make of coach. New examples are shown by Cadillac, Dodge, Jewett, Gardner, Nash and Studebaker. The Gardner, which is termed a brougham, is a particularly smart job. The new Cadillac coach is especially roomy. Advantage has been taken of the rear seat position being ahead of the rear axle, so that the width of the seat is really enough for three fairly corpulent persons.

## One Group of Late Body Models



1—Marmon sedan. 2—Hupmobile coupe. 3—Jay-Eye-See sedan. 4—Wills Ste. Claire roadster with dickey seat. 5—Jewett coach. 6—Apperson eight sedan with ventilating eaves

The right front seat back, or the seat itself, is tilted in most coaches to reach the rear compartment, but there are some coaches whose extremely wide doors allow the entrance of rear seat passengers without disturbing the occupants of the front seats. More coaches are being made with metal panels at the rear above the belt. Fewer companies are supplying trunks as standard equipment with coach models.

While on the subject attention should be called to the fact that owners soon learn to dislike the inconvenience of dismounting the right front seat occupant every time a rear seat passenger is dropped or taken on. If the cost of a four-door or a three-door body can be lowered, will the coach survive? This depends largely on whether buyers select this model for price reasons or from personal preference.

### Town Cars Not in Evidence

Open front limousines and landaulets are absent from this show, as they have been for the last few years. The town-car, a cabriolet or brougham, without a roof over the driver, has lived until this year. Unless our eyes failed us there is not a single example on the floor at the Silver Anniversary Show. Apparently these and the collapsible roof types of bodies are left to the custom trade.

Sedans and coupes are much in evidence, as in years past, the former retaining its place of leadership among the closed models.

Velie has an instructive exhibit of a body one half of which is entirely finished and the other half of which shows only the uncovered framework. This enables the prospective purchaser to get a better idea of method of body construction than otherwise would be possible and corresponds closely to the cutaway engine and chassis which always are centers of attraction.

Coupes appear to be either very practical for business use or quite sporty and fitted for pleasure jaunts. One example of the latter is the four-passenger staggered-seat Stutz coupe. Its storage facilities have been worked out especially to suit a typical American golf foursome. One Stutz coupe has a light in the rear compartment so arranged that the current is switched on when the deck door is open.

The Moon coupe has a rumble seat in the rear deck, and the rear window can be lowered so that the occupants of the front seat can converse with those in the rear.

### An Accessible Deck Compartment

The Maxwell business coupe is particularly noteworthy for the unusually large and accessible storage space in its rear deck. The spare tire is carried on the left running-board so that it does not obstruct the entrance to the rear deck opening. The lid runs clear down to the rear cross sill so that heavy packages may be slid into the compartment without lifting them over a high ledge or over the rear fenders. An unconventional note in this body, and in the Maxwell Club Sedan, is the unlined roof with exposed ribs.

Coupes and runabouts often have small side doors opening into a compartment in which golf clubs can be carried. In one case this door is hinged at the bottom and designed to act as step when open, while in one other the door extends full depth of side panel, thus permitting ready access to rumble seat.

Nickel plated bumpers front and rear are common. Stutz has tubular bumpers finished in black crystallizing lacquer with nickeled end fittings. These are carried in brackets bushed with rubber about  $\frac{1}{2}$  in. thick. Those

at the rear are set at an angle and are only wide enough to protect the fender.

Few of the sedans are fitted with auxiliary seats, the five-passenger type seeming to be in greatest favor. A tendency can be noted to make all closed cars look less bulky. Roof lines are very low and the bodies appear to be more compact in their general form.

Apparently the day has passed when the public demands that a car look like "a lot for the money." Buyers are showing a preference for grace and refinement. In one or two cases the writer noted that this striving for compactness had been carried too far; leg-room has been skimped and a fedora hat on a man of average stature will rub against the head lining.

Coming to the roadsters one finds many novelties. The rear deck and the rumble seat of the Velie roadster are particularly unique. Easy access is had to the deck seat by opening a door in the body side and lifting that part of the rear deck immediately behind the back curtain; this lid being hinged to the back of the front seat.

Ample leg-room has been provided in this rear compartment by depressing the floor to a point below the top of the body sill. Incidentally this provides additional storage space for golf paraphernalia and the like. A folding top is provided to cover the rumble seat passengers. It can be stored inside the rear end of the deck. When raised, this auxiliary top is supported as shown in an accompanying illustration. The side pillars or stanchions are formed by raising parts of the deck which are hinged at their lower ends.

Wills Sainte-Claire has a smart appearing roadster in which a belt line carried across the hood is swept upward at the rear end, along the side of the inclined windshield support.

### Studebaker Has Permanent Top Runabout

Studebaker has a new runabout with a permanent top fitted with landau joints for decoration and the same type of roller curtains used on Studebaker phaetons.

Peerless is exhibiting a handsome roadster finished in three colors on the six-cylinder chassis. The top of the bonnet and cowl is black above the belt-line. This color changes at the windshield to a dark tan, this being the color of the rear deck above the belt-line. All panels below the belt are painted light tan. It is a very striking color combination. This body is shown without the top in place.

A Jordan eight roadster painted a vivid red is also shown sans top. The deck lid of the Flint roadster is held closed by a latch which can be released from inside the front seat compartment. Here a nickel plated garnish rail is used, but most other garnish rails are natural or artificial wood.

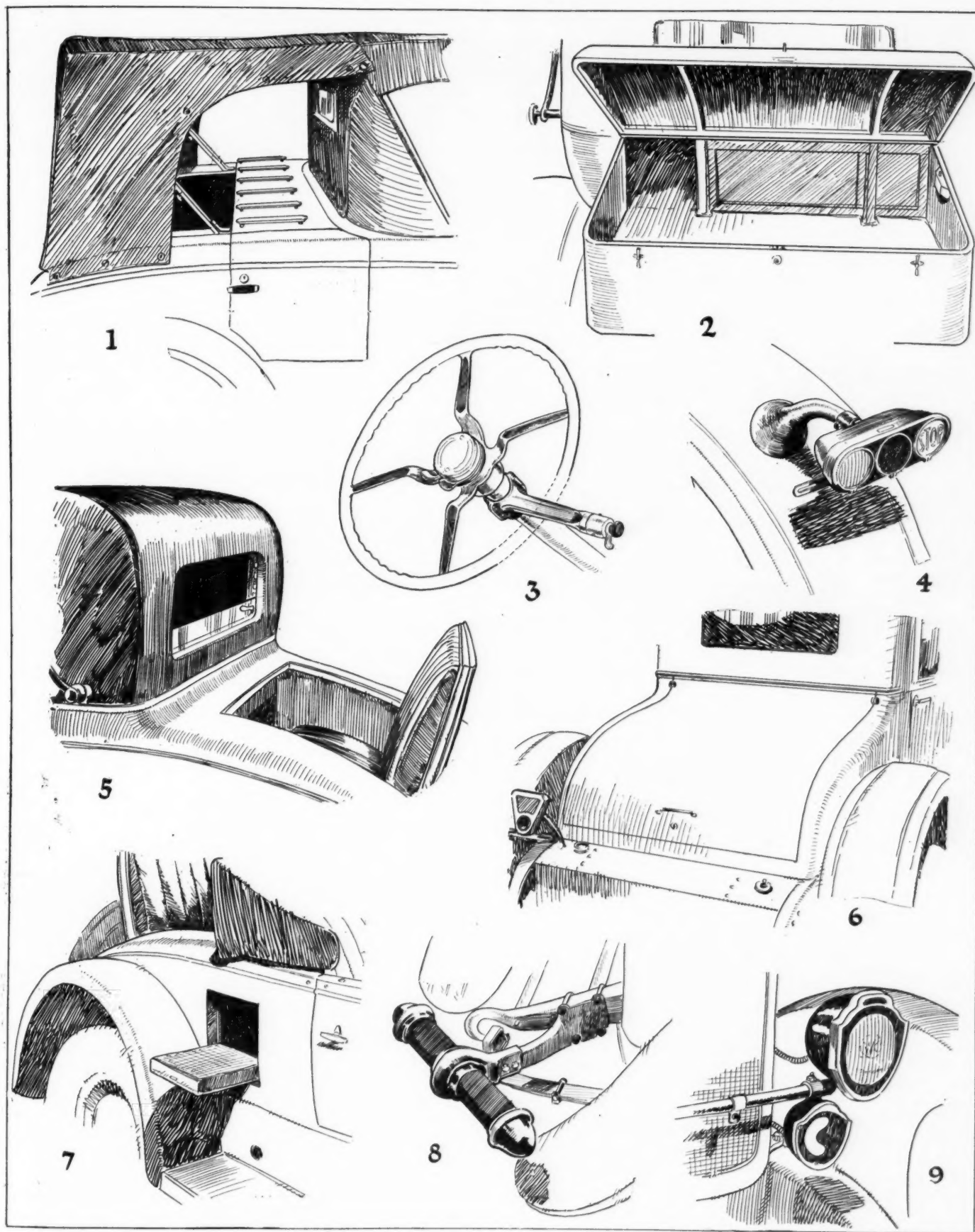
One criticism can be applied fairly to nearly all the roadsters at the show; the rear seat backs are uncomfortable and there is insufficient leg-room for the passengers. Not enough attention has been given to the contour of the upholstery provided on the underside of the deck lid, which forms the seat back when opened.

Next in importance to the lines and contours of the bodies themselves comes the improvement in finishing. Two-tone color schemes are used to greater extent than ever before.

In some cases side panels, wheels and super-structures are in one color, while belt-panels, rear deck and top of hood are in another shade. Monotony of black super-structures has been broken in a number of cases by use of some fairly subdued color; examples of this were seen on Lexington, Packard, Apperson, Dupont, Mercer, Overland, Chandler, Marmon and some other



## Features of Body Construction at New York Show



1—Folding cover over dickey seat on Velie. 2 and 6—Large rear compartments on Stutz and Maxwell coupes. 3—Button which switches off headlight and throws on spotlight, shown in 9, Willys-Knight six. 4—Rear light unit on Cadillac; left lamp lights when car is in reverse. 5—Adjustable window in the back of the Moon coupe. 7—Combination door and step on Moon roadster. 8—Fender guard on Stutz coupe

bodies. A Merrimac body on a Mercer chassis was the only example of colored fenders.

Nearly every body which has double belt-moldings is finished in two shades of green, tan or gray. Tans, greens and grays seem to be the most popular colors.

While giving life to the car, none of the popular shades are of the brilliant or vivid classification, such as the reds, oranges or yellows. Dodge, Essex, Hudson, Lincoln and Studebaker are numbered among the adherents of the darker finishes. In the case of the Lincoln exhibit particularly the dark finishes lend an air of dignity and richness which is most impressive.

### Glossy Finishes Predominate

Despite the introduction and wide adoption of nitro-cellulose enamels, glossy finishes predominate in this year's show. Only a few companies are exhibiting bodies in dull finish. Franklin and Case are among these. The others have all striven to obtain a lustrous finish equal to that of a varnished job. Those bodies which are not varnished have the pyroxylin enamel rubbed to a glossy finish or else it is waxed.

Apparently the sales reaction to dull and semi-dull finishes has been an unfavorable one. It will be remembered that nearly all the cars at the Salon Show were presented with lustrous finish.

One novelty in finishes is shown in the Stutz exhibit. This is an especially lustrous finish applied over mottled undercoats in such a way as to resemble the cloisonne enamels used a few years ago for body interior fittings. An open car is shown finished in mottled brown effect and a closed body is finished in mottled gray. The enamel is known as Robbin-Chrome and is not a nitro-cellulose material. It is very striking in appearance.

Exhibits at the Packard, Flint, Gray, Peerless, Jordan, Marmon and Auburn spaces are particularly colorful. Packard is displaying a stunning light blue phaeton with red disk wheels, this body being mounted on the Single-Eight chassis. A Packard coupe is finished in two-tone brown, and this is also a handsome job.

A Flint phaeton is finished in two tones of blue, these being particularly vivid. This particular body was equipped with tonneau windshield, the only one the writer noted in the show.

Peerless is the only company displaying a silver-finished car and body in commemoration of the Silver Anniversary of the Show. All the Marmons are finished in two tones of blue-gray, striped with red vermilion.

The Auburn bodies are conspicuous not only because of their unconventional lines but because of their vivid coloring as well. The new four-cylinder phaeton is finished in brilliant orange.

### Use of Bright Nickel

Bright nickel plating of lamps and radiators is almost universal practice. No doubt the improvements made in the art of plating, to greatly increase the durability of plated surfaces, have been responsible in part for this change from black enamel. Certainly the nickel finish enlivens and enriches the general appearance of a car. Dodge, Essex and Hudson retain black-enameled radiators on most of their models.

The Davis radiator has a depressed panel in the front of the shell at the top tank and this panel is finished with colored enamel. A nickel-plated diagonal band is placed over the core front of the Auburn radiator much the same as the decorative ribbon across the dress shirt front of a royalist.

Some new radiator mascots or emblems are revealed. The new Jewetts carry a winged "J" on the filler cap.

The Willys-Knight models have a Knight's helmet atop their filler caps.

Fenders are invariably single-piece stampings of deep section. Nearly all have raised panels stamped in the central portion. The lines of the fenders are generally graceful. It is noticeable that the old-fashioned shallow fenders with wired-on selvage are disappearing.

One-piece or single-sash windshields are coming with a rush. Two-piece shields are on some cars, but the trend to the more simple design is strong. The automatic windshield-wiper has been responsible for this development without question. Many of the bodies are equipped with the Fisher V-V regulator-operated shield.

The new Locomobile phaetons have stationary one-piece shields, the glass being mounted solidly in the two stanchions. A lid in the top of the cowl is depended upon for ventilation. An ingenious shield is fitted in the new Jewett coach. It has a double hinge along the top edge which permits it to rise a short distance vertically and then tilt outward. The vertical movement uncovers a ventilating slot across the windshield base. The raising is done easily by means of two eccentrically mounted levers at either side of the shield.

Ornate effects are entirely missing in the trim of the inclosed cars. A bit of broad-lace is used judiciously here and there, but one sees no tendency to return to the old-time carriage effects. Buttons and squabs are not in evidence, the conservative plait being common practice.

In a few cases a single row of buttons is found across the rear seat back about three-quarters of the way up, but there are no diamonds or figures similar to those seen in some of the recent custom bodies. Vanity and smoking sets are present in the higher-priced cars, but these are usually very simple and inconspicuous.

Interior hardware is very nearly all done in nickel, most of it bright finish. The embellishment of handles, lamps and fittings with decorative figures, so popular a few years back, has apparently been discarded. No particularly striking fittings are found in the new models.

### Interior Fabrics Changing

Judging solely on the basis of the cars at the show one must conclude that mohairs, mohair plushes and velours are giving way to smooth-finished cloths. True, there are many deep-nap or pile fabrics used, but they no longer predominate. The higher-priced cars are using broadcloth and worsted fabrics and some of the lower-priced models use wool and cotton mixtures of tough texture. Grays, buffs, browns and dark blues are the popular colors for interior trimming.

Black leather, as well as black bodies, are disappearing. Most open bodies have colored leather trimmings to match exterior finish. A large percentage of open bodies shown are sport models, many of them runabouts with folding dickey seats in rear deck. In such cases rear curtain of top is made removable. A few coupes also have dickey seats, and in at least one case of this kind the rear window can be lowered.

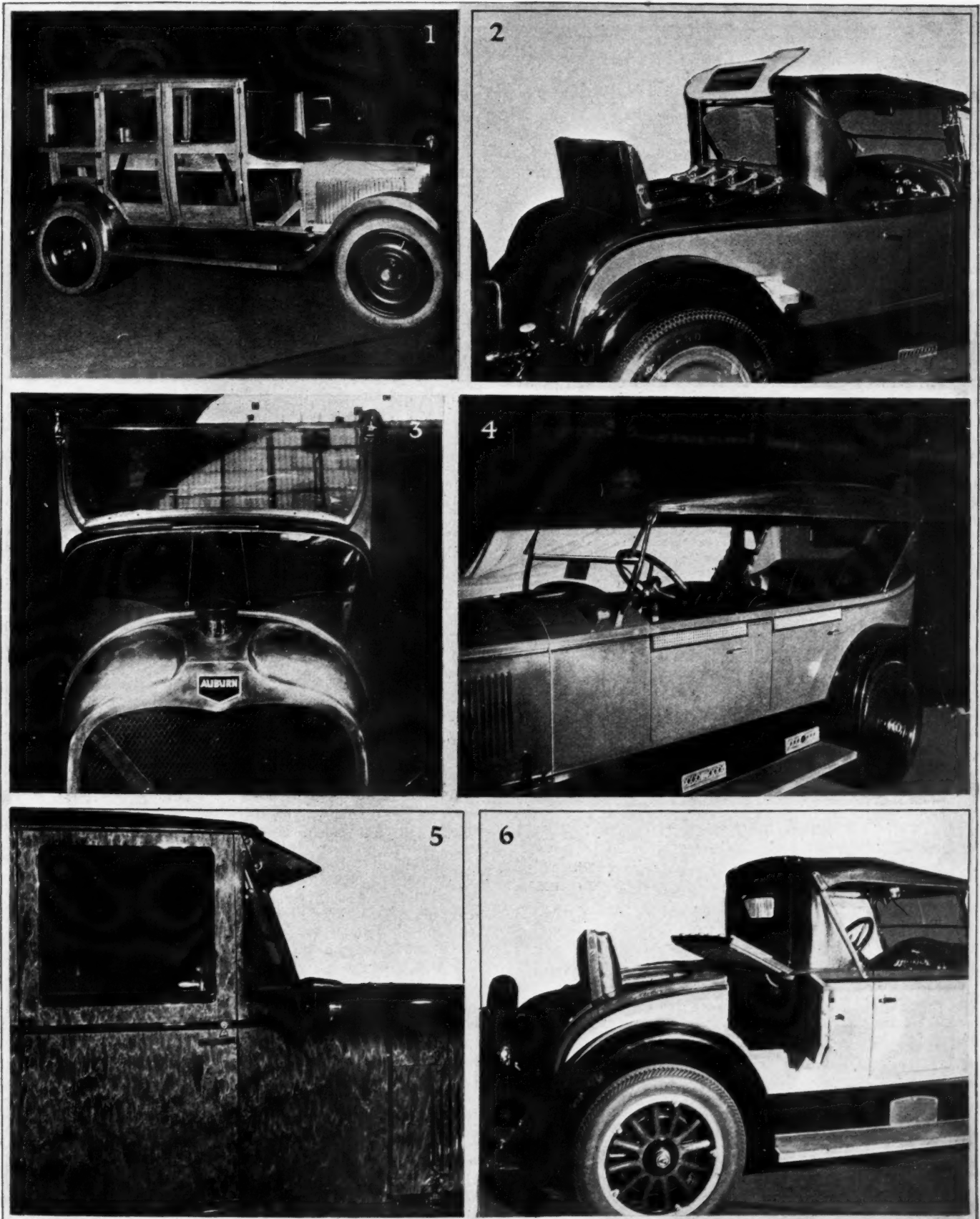
A few more models are using inlay panels of walnut for the embellishment of interiors. These are usually limited to the space below the tri rail on the doors.

While it is next to impossible for any two people to agree on the contour of a comfortable seat, the writer will hazard the opinion that seat shapes are much improved over those used in previous years.

That does not mean that there are no bad examples at the show. One that was examined was abominable. However, the body designers seem to have struck the happy medium in most cases.



## Some Body Close Ups at New York Show



1—Yellow cab exhibit of body framework. 2.—Dickey seat and removable rear curtain on Flint roadster. 3—Front view of Auburn eight. 4—Moon sport phaeton with narrow canework panels at belt. 5—Robin-Chrome finish on Stutz sedan. 6—Velie roadster showing door opening to rear compartment

# New Models and Mechanical Changes Numerous

*Cleveland, Locomobile, Auburn, Stanley, Gardner and DuPont among new chassis announced. Detailed revisions common.*

**C**OMPLETELY new models announced for the first time at the New York Show included a new Cleveland six, a Junior eight and a Junior six at the Locomobile booth; a four-cylinder Auburn; a six-cylinder Gardner; a light Stanley Steamer and a six-cylinder DuPont. The Barbarino, a newcomer to the four-cylinder ranks, was shown at the Hotel Commodore.

A large number of new body models, in addition to those previously described in *AUTOMOTIVE INDUSTRIES*, were displayed for the first time, while detailed mechanical changes were made in the Cadillac, Hupmobile four and several other cars. Following is an outline of the features appearing at the show not previously announced.

## Auburn

An entirely new small four cylinder car is being exhibited by the Auburn Automobile Co. It is equipped with a Lycoming engine of  $3\frac{1}{8}$  in. bore by 5 in. stroke, with a five-bearing crankshaft. The wheelbase is 108 in. and the tread standard. Balloon tires and disk wheels are standard equipment, the tire size being 29 by 4.40 in. A feature of the car is its low build. A unit powerplant is used and a transmission lock is provided. Spark and throttle levers are mounted on the dashboard instead of on the steering wheel. Ignition advance is semi-automatic. Semi-elliptic springs are fitted at both front and rear. A single piece windshield is one of the items of equipment. Complete specifications are not yet available, as several features have not been fully settled. The price of the open model will be under \$800.

The Auburn company also has an eight-cylinder-in-line model which is additional to and entirely distinct from the eight-in-line chassis announced last September. The new eight chassis has the Lycoming engine with the  $3\frac{1}{8}$  by  $4\frac{1}{2}$  in. cylinder dimensions. A Schebler carburetor and a Swan manifold are fitted. Fuel feed is by the vacuum system from an 18 gal. rear tank. The electrical system is of Remy make, with semi-automatic spark control.

A long clutch is fitted, together with a transmission by the Warner Gear Co.—the largest size made by this concern, it is said. The universal joints are of the Universal Products Co.'s make. Both axles are Columbia axles and four wheel brakes are regular equipment, those on the front wheels being internal expanding and those on the rear wheels external contracting. These brakes are fully equalized by means of a special Auburn equalizing mechanism. The emergency brake operates on a drum on the transmission shaft and is applied by means of a handle on the dashboard.

The frame is comparatively rigid, consisting of 6 in. channel side members and seven cross members, of which the two end ones are tubular. The frame stock is  $\frac{5}{32}$  in. thick. Wood wheels are standard but Smith expanded metal wheels are furnished at slightly additional cost. Semi-elliptic springs are fitted all around, the front springs being  $36\frac{3}{8}$  by 2 in. and the rear ones 57 by  $2\frac{1}{4}$  in. These springs consist of a great many thin leaves and a special shackle design is used.

The steering gear is a Ross cam and lever type, semi-reversible, the largest size made. There are three finger

levers on top of the steering wheel. One of these is the throttle lever; the second is a combined spark advance lever and switch and the third the lighting switch which shuts off all the lights in the intermediate position and lights up the lamps dim in one extreme and full in the other extreme position. The steering gear has a reduction ratio of 19 to 1. Prices on the eight range from \$1,975 to \$2,350. The new four-cylinder model is priced at \$795.

## Barbarino

A newcomer in the ranks of motor car manufacturers is the Barbarino exhibited at the Hotel Commodore during show week. This car is being built by the Barbarino Motor Co., 21 Lenox Road, Brooklyn, N. Y. Very few cars have as yet been turned out, but production is now under way in a factory with a present capacity of three cars a day. Some of the units of the car are manufactured by unit makers and others are made in the factory. The car reflects European practice in many respects. Only the chassis is furnished, the bodies being fitted by the dealer or purchaser. The chassis sells at \$1500.

The power plant of the car is a Le Roi four cylinder engine with bore of  $3\frac{1}{8}$  in. and stroke of  $4\frac{1}{2}$  in. The electrical system is Auto-Lite and the radiator has a large curved aluminum shell which is left in the natural finish. The car has four wheel brakes of the mechanical type, the two front brakes being of the expanding type and the rear ones of the external wrapping type.

## Cadillac

Extensive changes have been made in the Cadillac rear axle, four wheel braking system and steering knuckles. Ball bearings instead of the roller type, now are used on the pinion shaft and to support the differential. The former is carried in an annular ball bearing at its forward end and in a double row at the rear. Adjustments for pinion clearance are affected by means of shims. The differential is supported in a single row ball bearing on the left side and in a double row on the right. Provision for adjusting the differential transversely is provided at the double row bearing.

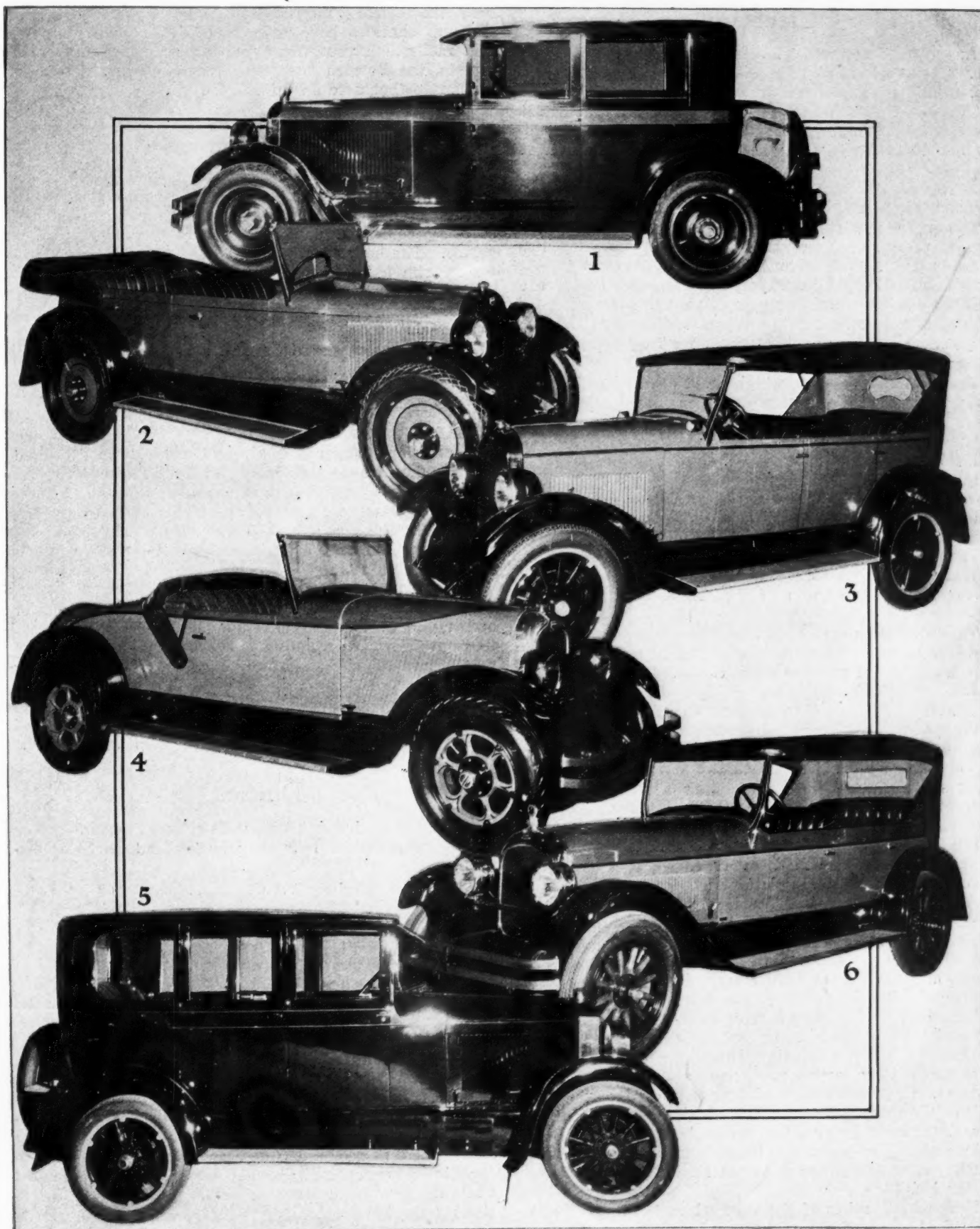
The brake pedal now is linked to a substantially vertical equalizer bar which divides the braking force between front and rear wheels on a 40-60 basis. The lower end of this equalizer is pivoted to a lever on a cross shaft supported by brackets from a frame cross member. Cables lead to the front brakes from levers on the ends of this cross shaft.

From the upper end of the vertical equalizer bar, a rod leads to the rear wheel brake equalizer. The ends of the latter are pivoted to levers on cross shafts supported from the frame member at the front rear spring supports. These shafts pass through the spring hangers and the levers on their outer ends are connected by rods to the rear wheel brake operating levers.

The front wheel brakes have undergone detail changes and the knuckle construction has been altered. On the left side, the drag link and tie rod arms are an integral forging which is keyed and bolted to the knuckle to a



## Six New Body Designs Shown at the New York Show



1—Gardner coach with tan leather trunk at rear. 2—Auburn phaeton on new four-cylinder chassis. 3—\$895 phaeton on Cleveland's new low-priced six chassis. 4—Auburn runabout with pointed hood panel on eight-cylinder chassis. 5—One of the new Stanley steamers. 6—One of the two new Junior Locomobiles

bracket forged on the knuckle directly below the axle. On the right side, the tie rod arm is attached in a similar manner. The tie rod connections have also been improved.

## Cleveland

An entirely new six-cylinder chassis known as Model No. 31 was introduced by Cleveland to supplement the No. 43 line announced last June.

Two new closed bodies, a five-passenger coach at \$1,295 and a sport sedan at \$1,725, have been added to the regular line of closed jobs on the standard Cleveland No. 43 chassis.

A touring car at \$895 and a sedan at \$1,195 will be included in the new No. 31 model.

The engine retains the same shape of combustion chamber, three-bearing crankshaft and other characteristics found in the No. 43 motor.

The engine is an L-head type, having a bore and stroke of  $2\frac{7}{8} \times 4\frac{1}{4}$ , and developing a maximum horsepower of 45 at 2600 r.p.m. Cast iron pistons fitted with three rings above the pin are used, the lower ring acting as an oil scraper.

The connecting rods are high carbon open hearth steel forgings of I-beam section with the piston pins locked in the upper end and bearing in two bronze bushings in the piston itself. No shims are used between the cap and rod, that the oil film may not be relieved at this point.

Inlet and exhaust manifolds are cast separately, the former having four ports and the latter six, with the exhausts meeting at a "Y" at the center of the engine and giving a better heating effect to the inlet hot spot.

The heads of the valves are of cast iron electrically welded to steel stems. The three-bearing camshaft is driven by a Morse chain of the conventional triangular type.

The lubrication system is designed to operate as a full pressure system. From the pump, the oil passes in separate leads to the main bearing caps and then along the hollow crankshaft to the connecting rods.

The cooling system is by fan and water pump, the latter being positively driven and, except for the size, being slightly smaller; the radiator is the same as that on the Model No. 43. American Bosch two-unit electrical equipment and an automatic advance ignition unit is used in connection with a six-volt Prest-O-Lite battery. An over-size vacuum tank takes the fuel from the 12-gal. cylindrical tank at the rear of the frame and delivers it to a Johnson carburetor of the latest type.

A Borg & Beck single plate clutch transmits power to the three-speed gearset. The transmission is similar to the No. 43 except that the bell housing is cast solid with the transmission case instead of being bolted.

The clutch and main shafts are mounted on ball bearings while the countershaft is carried in phosphor bronze bearings. Flexible fabric joints connect the hollow propeller shaft to the semi-floating rear axle, which has a pressed steel banjo housing and is practically a smaller duplicate of the No. 43 axle. The ring gear is of  $3\frac{1}{2}$  per cent nickel alloy carbon steel, having 47 teeth which, in connection with a 10-tooth pinion, gives a 4.70 axle ratio.

The rear wheel brakes are of the conventional external contracting type, the drums being  $12\frac{3}{8}$  in. dia. x 2 in. wide. The emergency brake is mounted on the rear of the transmission and is of practically the same design as the No. 43.

Four-wheel brakes of the external contracting type are furnished at an additional cost and are similar in operation and design to those fitted optionally on the No. 43 model.

The steering gear, having a ratio of 10 to 1, has been specially designed for the low pressure tires, which are of 30 x 4.95 size and fitted as regular equipment. The spring suspension is by one-half elliptic springs front and rear, the former being  $32\frac{1}{2}$  in. long and the rear 49 in. Take-up shackles have been adopted to eliminate noise and rattles. Except for a reduction in the number of outlets, the Bowden "one shot" chassis oiling system is similar to that used on the No. 43.

## Davis

One new sedan is added to the Davis line, which otherwise remains unchanged. This is priced at \$1,995, which is \$100 higher than the former sedan, and has the top covering continued down over upper rear and quarter panels. The body length is increased two inches and interior trim is in Baker velour. A one-piece windshield is used. Finish is in two tones of dark green, Topanco and Brewster. This and all other Davis bodies are finished in varnish.

Except for a new radiator and higher hood, the chassis remains unchanged.

## Dodge

A new 5-passenger special coach model was exhibited for the first time by Dodge Brothers. The new coach, which is fully equipped with all accessories, sells at \$1,195, exactly \$100 more than the regular coach recently announced in these columns. These new coach bodies are supplied by Fisher and equipped with the new VV windshield.

A new type of camshaft has been installed on all motors which makes for quieter operation and gives a slower opening to the valves. The inlet and exhaust cam contours are now exactly alike. Up to the present time the valves have relied on whatever oil got by the pistons for lubrication; now, two thimble holes have been placed at the bottom of the valve chamber so as to allow the oil mist from the crankcase to lubricate the valve guides and give a cushioning effect between the stem and tappets.

## DuPont

DuPont introduced its new six-cylinder chassis. The line is comprised of four body models and priced as follows:

2-p. Roadster .....	\$2,600
5-p. Touring .....	2,600
7-p. Touring .....	2,750
5-p. Touring Sedan.....	3,400

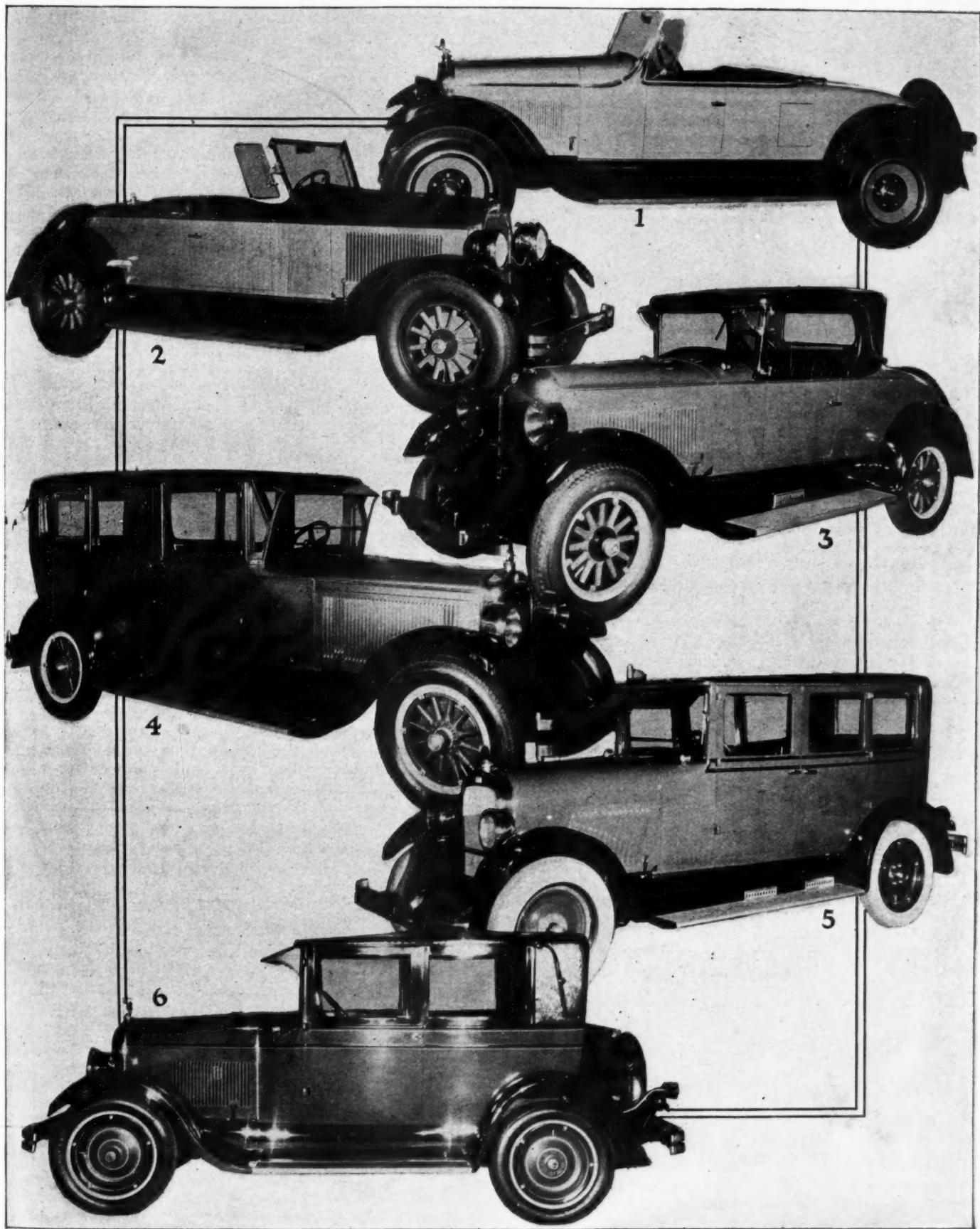
The 7-passenger body is entirely new, being finished in Cobalt blue with black upholstery and a khaki top.

A six cylinder Wisconsin engine of  $3\frac{3}{8} \times 5$  replaces the Herschell-Spillman Model-90 motor used in 1924. A Schebler  $1\frac{1}{2}$  in. carburetor, Bosch two-unit electrical system and ignition system are now used.

A Campbell's clash-proof transmission is employed in connection with a Long multiple disk clutch, the whole being a unit with the engine. Metal universal joints connect the two part propeller shaft to the semi floating Eaton make of rear axle, the ratio being 4.70 to 1. The foot brake operates hydraulic type four-wheel brakes while the emergency lever is coupled direct to the drive-shaft immediately behind the transmission. A Jacox screw and nut steering gear connects with an Eaton front axle, the steering pivots having an inclination of  $7\frac{1}{2}$  degrees. The springs are half-elliptic all around, the front



## Group of Silver Anniversary Bodies



1—Wills-Ste. Claire roadster. Note belt line carried up windshield support. 2—Smart three-color Peerless roadster. 3—Studebaker roadster with permanent top. 4—Jordan's 7-passenger straight eight sedan. 5—Lexington sedan. 6—Latest Jewett coach

being 39 x 2 and the rear 59 x 2½. A pressure gun type of chassis lubrication is employed. The wheelbase is 124 in. and the balloon tire size 32 x 6.20.

## Flint

Flint introduces two entirely new models on the 55 chassis, one, a four door brougham in dark blue at \$2750 and the other a roadster with a folding rumble seat and finished in dual tone brown with Spanish leather upholstery to match at \$1950. The prices on the regular line were recently advanced \$100. No mechanical or body changes have been made on the 55 model.

Several changes have been made in the 40 line for 1925. Lockheed hydraulic four-wheel brakes are standard equipment and balloon tire size increased from 30 in. x 5.20 in. to 30 in. x 5.27 in.

In order to accommodate a new type of Ross steering gear which supersedes the Warner make formerly employed, the exhaust pipe is now led down the front of the engine, this having the double effect of cooling the gases and allowing the necessary space for the mounting of the new gear. A Carter make of carburetor and a redesigned manifold has resulted in better carburetion. To give greater rigidity to the frame, the engine mounting has been changed from a three point suspension to a four point, and is now carried in a separate sub-frame.

A special touring known as the "40B" and upholstered in genuine leather is shown for the first time, the list price being \$1285. The bodies on the "40" are of heavier construction to withstand extra rough usage, this feature together with the flat springs gives the car better riding qualities.

The Dot lubrication system now is used on both the 40 and 55 chassis. Crowned fenders similar to those on the "55" models are now used on the "40," and the open models are also fitted with the 55 type of windshield.

## Gardner

In addition to the 8-in-line models recently introduced to supplant the regular 4-cylinder chassis and fully described in Jan. 1 issue of AUTOMOTIVE INDUSTRIES, Gardner announces a new six cylinder balloon tire chassis of 117 inch wheelbase will be added to the present line in March, the object being to give the Gardner dealers a complete range of four, six and eight cylinder chassis models.

The six will be powered with a new Lycoming motor having a bore and stroke of 3½ x 4½ and will come with the \$1200 and \$1300 price class.

## Gray

Gray has added a new 3-passenger coupe finished in jet black with nicked radiator. The interior finish is in dressed corduroy with a comfortable form fitting driver's seat set slightly ahead of the seat for the other two passengers. A luggage compartment is contained in the rear deck. Gray is featuring in its exhibit display boards with various parts used in the car. All Gray bodies are finished in varnish and a plaque for winning the World's Economy Record in 1922 is prominently displayed.

## Hupmobile

Details concerning the numerous improvements that have been made recently in the chassis and bodies of the Hupp four-cylinder line, were made public for the first time at the Show. All models are now being finished in

Duco, an option of either blue or blege being offered. Standard equipment now includes 31 x 5.25 in. balloon tires, nickel radiator shell and head lamps, and bar radiator cap. The fenders have a deeper crown and balloon type snubbers are fitted.

In the engine, the only change of importance is the adoption of skeleton type, light weight cast iron pistons. The rear axle is an entirely new semi-floating unit with banjo type housing. The pinionshaft is carried in an annular ball bearing at the rear and in a double row at the front. This shaft is adjustable from the outside of the axle. The differential is mounted in a carrier which bolts to the axle housing. Axle shafts are removable endwise without disturbing the differential. The differential and wheel bearings are Timkens.

The brake drums have been enlarged from 12 to 14 in. in diameter. The inner ends of the brake operating shafts now are supported by brackets from the axle housing. Universals are of the metallic type instead of the fabric design used previously. The steering column has been lowered and the spark and throttle levers are of the short type without quadrants.

On the closed models, a drain pipe has been provided for the gutter at the base of the windshield. The two passenger coupe and the club sedan now have one-piece windshields, and the length of the latter body has been increased three inches. An improved trunk with lock has also been made standard equipment.

## Jordan

Jordan has added, in addition to the "Friendly Three" coupe recently mentioned in these columns, a seven-passenger sedan on 132 in. wheelbase chassis. This is listed at \$3250 and, except for extra length, is similar to the five-passenger sedan. As on other bodies, either lacquer or varnish finish is available.

## Kissel

Prices on the new Kissel straight eight models range from \$2485 to \$3585 and include four wheel brakes, balloon tires, snubbers front and rear, bumpers front and rear, clock, automatic windshield wiper, rear view mirror, two tire covers and two side tire carriers.

A new two-door, five-passenger closed model called the brougham and priced at \$1895 has been added to the six-cylinder line. All eight-cylinder models, except the speedster, and enclosed speedster, are equipped with trunks and the closed models have heaters. The complete price schedule on the eight-cylinder line follows:

Model	Eight Cylinder		Price
	Passengers	Wheelbase	
Speedster .....	2	126-in.	\$2,485*
Speedster .....	4	126-in.	2,585*
DeLuxe brougham.....	5	126-in.	2,985
Victoria .....	5	126-in.	2,985
Enclosed speedster.....	2	126-in.	2,985*
Sedan .....	7	137-in.	3,485
Berline sedan.....	7	137-in.	3,585

\*Prices include six wire wheels.

## Lexington

Lexington showed a new Concord special sedan selling at \$2445. It is finished in elephant gray below the belt line, has a double belt mold and is Maxine blue above the belt. Standard equipment includes 20 in. wheels, 5.77 x 30 in. balloon tires. Hydraulic four-wheel brakes are optional equipment on all models.





*At the first New York show twenty-five years ago manufacturers found it necessary to provide a runway within the building to demonstrate that their cars would run*

## Lincoln

Changes of a minor nature have been made in the Lincoln chassis. Its height has been reduced by one inch without any decrease in road clearance by a change in the front axle forging which has lowered the spring seats and by lengthening the rear spring horns. Quieter engine operation has been secured by a change in the cam contour which gives a smoother valve opening and closing. Fenders are more deeply crowned and the panels which were formerly pressed into them, have been eliminated.

## Locomobile

Locomobile brought to the show two distinct surprises in the Junior Eight and the Junior Six. Both of these new chassis are distinct departures from previous Locomobile designs, being smaller and less costly. Production is not yet under way on either model and it is not expected that deliveries will start before the middle of April. Both chassis are identical with the exception of the engine and wheelbase.

The Junior Eight is powered with an engine with eight cylinders in line, the bore being 2 11/16 in. and the stroke 4 in., giving a displacement of 181.5 cu. in. and a rated horsepower of 23.2. This engine has been developed from the Miller straight eight racing engines and it is claimed to develop 63 hp. at 2800 r.p.m.

The cylinders are cast in block with the upper half of the crankcase, and large water spaces are provided at all necessary points. The sections are strongly ribbed and the engine has an unusually short appearance. The

crankcase has been made quite deep to provide the necessary stiffness. The valves are in the cylinder heads and are operated by push rods and rocker arms working on hardened steel pins fed with oil under pressure.

Connecting rods are drop forged and are babbitted direct to the steel in the big end. The crankshaft has large bearings and checks for stiffness and is supported in five bearings. A Lanchester damper is installed at the front end of the crankshaft to compensate for the secondary unbalanced force inherent in an eight or a four.

Lubrication is by full pressure feed from a gear pump. The cooling is by a centrifugal pump driven through the generator shaft. The radiator is of the honeycomb type and the fan is a four-bladed member, 16 in. in diameter.

The front end drive on this engine is by link belt chain which is provided with an automatic take-up.

The clutch is an elastic single plate dry type similar to the design used in the Star. The electrical starting, lighting and ignition system is De Jon of 6-volt type and a 92-amp. hr. battery is provided. The gearset is of conventional three-speed type, the mounting being separate from the clutch and with a double flexible disk universal between the two members.

A feature of both the Junior Eight and the Junior Six chassis is the use of rubber shock insulators on both the front and rear springs in place of the conventional shackles. Throughout the chassis, oilless bushings have been used wherever possible, so that the elimination of the usual points of lubrication on the shackles and at these other points, lubrication of the chassis parts is reduced to a minimum.

The brakes are of the locomotive type on all four wheels and are quite similar in design to those used on the Flint.

They operate both internally and externally on the drums. The hand brake is located on the propeller shaft, the drum being  $6\frac{3}{4}$  in. in diameter by 2 in. in width. The service brakes are equalized in pairs by a long bar equalizer.

The standard equipment on both chassis is artillery type wheels with balloon tires 30 x 5.77. The wheel base on the Eight is 124 in. and on the Six 115 in. The tread on both models is  $56\frac{1}{2}$  in.,  $\frac{1}{2}$  in. wider than the generally recognized standard tread.

The gasoline tank is located at the rear end of the frame, is suspended at three points and is protected by a steel cover and a cross dummer. The capacity is  $16\frac{1}{2}$  gallons and the feed by Stewart Vacuum system to the carbureter.

The engine on the Junior Six is of the L-head type developing 48 hp. at 2400 r.p.m. The bore is  $3\frac{1}{8}$  in. and stroke  $4\frac{1}{4}$  in. giving a displacement of 195.6 cu. in. The cylinders are cast in block with the upper half of the crankcase. There are four crankshaft bearings and the camshaft has an equal number, the valve lifters being of a special mushroom type.

Lubrication is of the forced feed type. The camshaft drive is by Morse silent chain.

Both the two new chassis are fitted with Adams axle front and rear. The front is of the reverse Elliott type, fitted with taper roller bearings and the rear is of the semi-floating type provided with ball bearings throughout. The gear ratio on the Eight is 5 1/9 to 1 and on the Six is 4 7/9 to 1. The prices are as follows:

Junior Eight	
Touring car.....	\$1,785
Sedan .....	2,185
Brougham .....	2,285

Prices on the Junior Six are:

Touring car.....	\$1,600
Sedan .....	2,000
Brougham .....	2,100

No changes have been made in the larger Locomobile model which is continued as a leader in the line.

## Marmon

Marmon is showing a new seven-passenger sedan priced at \$3370. It is finished with Duco in a two-tone gray color combination with black top and running gear and with red striping.

## Mercer

Returning to the New York show after a fourteen months' non-production period, Mercer is exhibiting its 6-cylinder chassis, which was first introduced in 1922. Production is being resumed on a limited scale and the future Mercer cars may be considered as strictly custom jobs and will be built to order only. The old 4-cylinder model discontinued several years ago, will also be available for those who desire this particular type of car. A 5-passenger touring selling at \$4500, and a sport sedan by Merrimac listing at \$6200 are exhibited.

Four-wheel brakes of the internal cam operated type are fitted as standard equipment. The foot brake which was formerly applied on the drive shaft is now coupled to the brakes on the front and rear wheels and the emergency hand lever operates on the drive shaft.

The motor, which is now built entirely in the Mercer factory, has not been changed except for the adoption of dual ignition and the locating of the spark plugs horizontally on each side of the cylinders.

The sport sedan exhibited was specially designed for a chassis and is equipped with a Brewster type three piece windshield. The finish is in two tone Biege with copper colored upholstery.

## Moon

Several novel features of body design are shown by Moon on its new roadster and cabriolet bodies on the Series A chassis. Both of these models have rumble seats and, on the roadster, the door to the golf bag compartment is utilized as a step to this seat. In the cabriolet, which is a coupe type, the rear window may be lowered so that the passengers in the rumble seat may converse with those in the front seat. This model also has a sliding one-piece windshield operated by a mechanical control at the top within easy reach of the driver.

The roadster, which is priced at \$1250, is finished in gray Duco with leather upholstery to match. It has a black belt line molding and red striping. The wood wheels have the popular natural finish.

No price has been announced on the cabriolet. This body is finished in two-tone brown Duco with black top, running gear and belt molding.

## Nash

At the Nash stand are shown two additional body models for the Advanced Six line. One of these is a 4-passenger victoria on the 127 in. wheelbase chassis and sells at \$2090, while the other is a two-door sedan on the 121 in. wheelbase chassis and sells at \$1485. Both have Duco finish.

## Oakland

Oakland has improved its manifolding by extending the exhaust heat jacket downward so that it now entirely surrounds the riser to which the carburetor bolts, and by providing a dash control for regulating the amount of heat supplied to the mixture.

A vertical baffle in the heating jacket divides it into two parts which are connected at the bottom.

Butterfly valves controlled from the dash are located in the inlet and outlet of the jacket. In the fully open position, the exhaust gases from the forward cylinders are deflected into the heating jacket and then pass down one side of the riser and up the other returning to the exhaust manifold. In the closed position, the heating jacket is entirely shut off from the exhaust manifold. The butterfly valves, of course, can be set in any intermediate position to give any desired degree of mixture heating.

## Oldsmobile

Oldsmobile has adopted 31 x 4.95 balloon tires as standard equipment on all models and has increased its prices by from \$10 to \$25 except on the sport roadster which remains at \$985.

The engine now is fitted with a new design of piston which permits closer fitting in the cylinder. The thrust faces of the skirt have a horizontal slot cut in them to prevent the transfer of heat from the piston head with consequent distortion.

## Packard

No mechanical changes have been made in the Packard single six and the straight eight except that the steering gear of the six has been redesigned to correspond to that of the eight, which change was made in the interest of easier and more positive steering.

## Peerless

A four passenger sport roadster has been added to the Peerless six-cylinder line. This job is done in two-tone brown with black fenders and aprons. It has a disappearing top and a rumble seat for two in the rear deck. Equip-



ment on this model includes windshield wings, automatic windshield wiper, rear view mirror, front bumper, rear fender guards, motometer, and nickel head lamps.

An eight-cylinder touring model finished in dull silver, was a feature of the Peerless exhibit. It was the only model finished in this manner at the show.

## Pierce-Arrow

Three new body models on the "80" chassis have been added to the Pierce-Arrow line. These are:

4-passenger sport touring.....	\$3,095
4-passenger coupe.....	3,695
2-passenger runabout.....	2,895

Only the last mentioned of these is on exhibit at the show. It has a dicky seat in the rear deck and an aluminum step to facilitate access to it.

## Reo

A sport roadster, which was not at the show on the opening day, is added to the Reo line. This job lists at \$1685 and represents the only new model which Reo offers beyond those bodies described in our issue of Nov. 20.

## Rollin

Slight modifications in the Rollin chassis include a new and flatter transverse rear spring with more and thinner leaves anchored to a new down swept rear cross member. Addition of a Ross cam and lever steering gear, a new gearset lock, a new model Borg & Beck clutch and a muffler tail pipe extended clear to rear of chassis. The cutout, formerly on dash, is mounted on the generator, which carries the fan.

## Stanley Steamer

A smaller, lighter and less expensive car are the characteristic features of the new Stanley steamer. Two models, a five-passenger touring and a five-passenger sedan listing at \$2500 and \$3300, now comprise the entire line. Both bodies are of entirely new design and bear little resemblance to those formerly mounted on the 740 chassis.

Although the condenser (radiator) is the same, the general appearance of the new models has been greatly enhanced by a considerable lowering in the height of the frame and the adoption of 31 x 4.95 balloon tires. Lockheed four-wheel hydraulic brakes are standard equipment.

## Star

The Star line is shown complete and a new body model is added, this being a coach priced at \$750. It is a two door job with wide windows at the sides. All windows, both in the doors and sides, are crank operated.

## Stearns-Knight

Two bodies have been added to the Stearns-Knight line on the model "S" chassis. These are a sport coupe, sport brougham, both priced at \$3395. The finish on both models is in varnish and the fitments and general design follow practice on other Stearns closed jobs.

## Stutz

In addition to a new 4-passenger coupe, Stutz introduces an entirely new style in automobile finish known as the Robbin-Chrome, and is shown for the first time on a touring and sedan model. An exceptionally high luster obtained with a special varnish gives the bodies a polished marble appearance. The Robbins Body Corporation of Indianapolis are the originators of the new scheme and have patents pending covering it.

Several changes have been made in both chassis this year. The 695 engine which is now built throughout in the Stutz factory, is used also in the 693-4 line replacing the Wiedley six, formerly employed.

## Velie

Two entirely new body styles, a 4-door coach at \$1450 and a sport Roadster at \$1650 have been created by Velie and added to their current line of models. The price of the 2-door coach which is similar in all respects to the 4-door except for the number of doors, lists at the same price as the Club Phaeton.

### Statistical Picture of Seven New York Shows

	1919	1920	1921	1922	1923	1924	1925
Total exhibitors .....	196	307	307	337	356	294	279
Total car exhibitors .....	...	...	86	87	78	73	61
Total accessory exhibitors .....	141	225	221	250	278	221	218
Total number of vehicles exhibited .....	225	334	341	310	283	347	262
Total number of stripped chassis exhibited .....	...	...	35	36	42	39	36
Total number of complete taxicabs exhibited .....	...	...	...	...	...	11	11

Body Styles							
	1919	1920	1921	1922	1923	1924	1925
Open cars .....	127	176	163	158	127	117	82
2-3 passenger .....	...	...	40	29	14	16	13
4-5 passenger .....	...	...	91	102	92	91	57
6-7 passenger .....	...	...	32	27	21	10	6
Closed cars .....	79	119	120	149	155	180	180
2-3 passenger .....	...	...	23	37	19	21	13
4-5 passenger .....	...	...	80	80	101	121	144
6-7 passenger .....	...	...	27	32	35	38	23

Engine Characteristics							
	1919	1920	1921	1922	1923	1924	1925
Four cylinder .....	40	65	80	84	83	66	48
Six cylinder .....	141	223	213	204	199	188	192
Eight cylinder .....	34	29	31	41	37	43	...

Engine Characteristics							
	1919	1920	1921	1922	1923	1924	1925
Straight eights .....	...	...	...	...	...	...	37
V eights .....	...	...	...	...	...	...	21
Twelve cylinder .....	8	7	3	2	1	0	0
Poppet valve .....	...	...	321	319	307	285	291
Sleeve valve .....	...	...	12	8	12	12	7
"L" head .....	...	...	180	206	209	204	205
"T" head .....	...	...	29	15	12	8	9
Valve in head .....	...	...	119	86	83	67	78
Valve in head and side .....	...	...	...	...	16	6	6

Wheels							
	1919	1920	1921	1922	1923	1924	1925
Artillery .....	...	...	215	225	235	128	157
Wire .....	...	...	70	67	21	24	22
Disc .....	...	...	56	37	71	145	113

Four-Wheel Brakes							
Number of Models Fitted							
	1919	1920	1921	1922	1923	1924	1925
Standard equipment .....	...	...	...	...	...	44	147
Optional and extra cost .....	...	...	...	...	...	37	42

Balloon Tires							
Number of Models Fitted							
	1919	1920	1921	1922	1923	1924	1925
Standard equipment .....	...	...	...	...	...	14	217
Optional and extra cost .....	...	...	...	...	...	46	39

Figures do not include taxicabs, except total car exhibitors

# Increase of Eight-in-Line Engines Chief Power Plant Design Trend

*Crankshafts are getting more husky. Cylinders are being cast integral with crankcase in greater number of cases.*

By P. M. Heldt

FROM the standpoint of engine design the most outstanding feature of the show is the great number of eight-cylinder-in-line models exhibited. There are now a round dozen eight-in-line cars on the American market (Apperson, Auburn, Duesenberg, Elcar, Gardner, Hupmobile, Jordan, Kissel, Locomobile Junior, Packard, Rickenbacker and Roamer), where a year ago there were only two. It is quite evident from this that in manufacturing circles there exists a large body of opinion to the effect that those purchasers who are looking for something a little better than the ordinary are very favorably impressed by the virtues of the eight-cylinder vertical type of engine.

Another thing which cannot escape the attention of the observant show visitor is the preponderance of the polished radiator shell. Originally radiator shells were made of brass and had to be kept bright by constant polishing. Then came the pressed steel shell which was enameled in black or color, generally to match the color of the engine bonnet. Finally the nickel plated radiator appeared. It came into vogue almost in a season and predominates greatly at the show. A number of aluminum radiator shells may be seen also, but these are not stock equipment in every case. It takes a considerable time to make the dies for pressed steel shells and so the experimental shells and those on a first small lot of cars often are made of cast aluminum, whereas, when regular production starts, pressed steel shells are used.

## Crankcase Integral with Cylinders

An increasing number of engines have the cylinders cast integral with the upper part of the crankcase, a construction which not only eliminates a certain amount of machine work but also tends to give a more rigid support for the crankshaft bearings. The cylinder heads, which, of course, are detachable in every case, are sometimes made in two or three castings, the new Junior being an example of this practice. The reason for this is that the compression space is formed in the head, and if all of the heads were in one casting, a slight inaccuracy in the machining of the joint surface might cause a considerable difference in the compression chamber volumes at opposite ends. This difficulty, of course, can be avoided by completely machining all of the compression chambers.

A problem that arises in connection with the long cylinder blocks is that of insuring uniform flow of the cooling water throughout the jacket space. Formerly it was customary, even with four-cylinder engines, to use water inlet and outlet manifolds, which were usually of brass tubing with brazed joints. On some cars these manifolds are still being used, as, for instance, on the Case, but it has become the general practice in recent years to have only one water inlet, which is frequently at the side of the cylinder block not far from

the pump, and one outlet, at the forward end of the cylinder head. Where this construction is used with a very long cylinder block it is obvious that the circulation cannot be as energetic in the rear as in the forward end of the block and the rear cylinders therefore might be expected to become materially hotter than the front ones. For this reason in nearly all of the eight and in many six-cylinder blocks special provisions are made to insure equalization of flow throughout the jacket. Thus in the Lycoming eight-cylinder engine, which is used on the Gardner, Auburn, Elcar and Roamer cars, the water is distributed throughout the jacket by means of a header formed integral with the jacket cover plate and provided with a hole opposite each space between adjacent cylinders.

## Controlling Cooling Water Flow

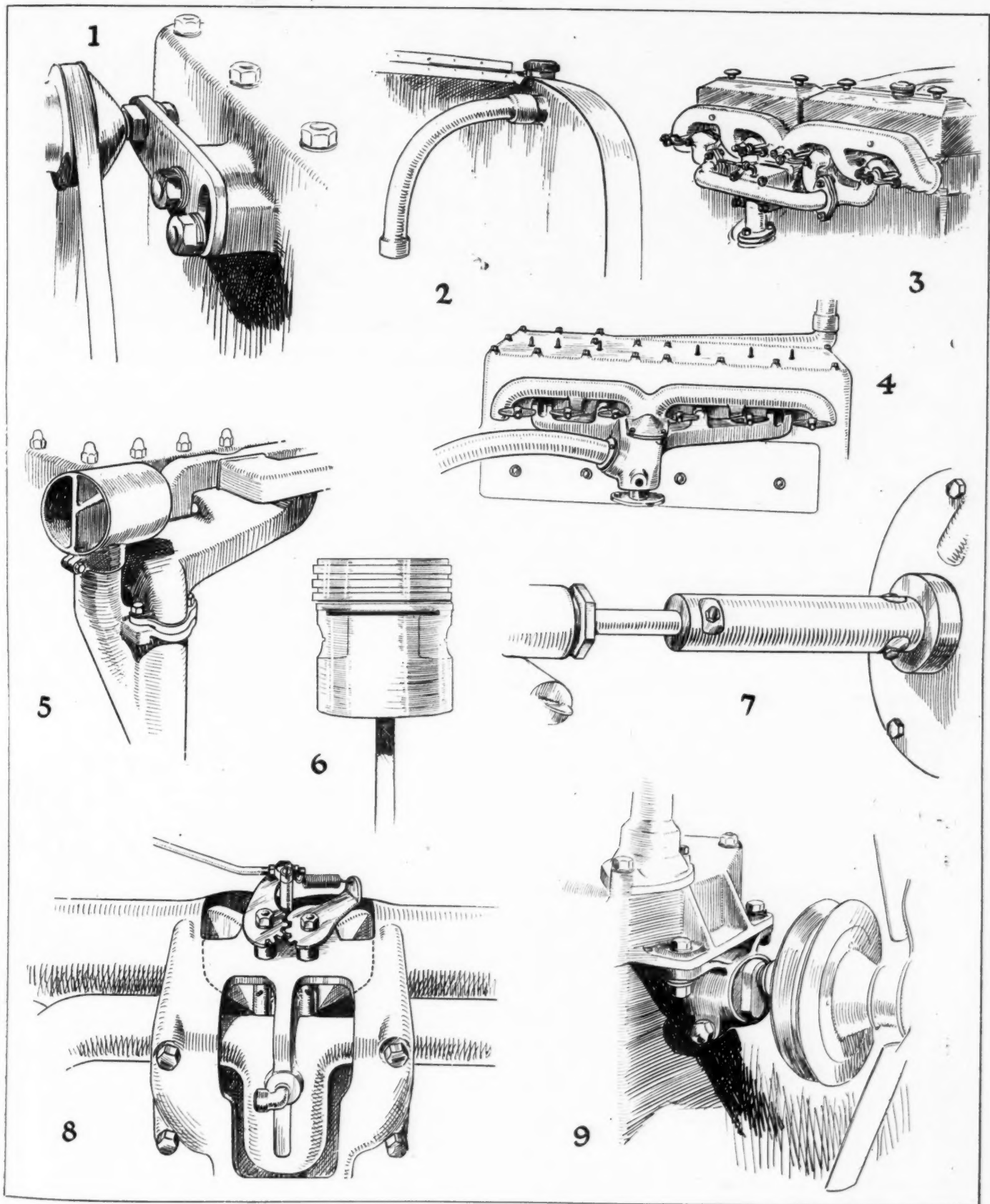
In the Continental eight-cylinder engine there is a cored passage in the cylinder casting through which water is carried to the rear of the block, and an outside return manifold on top of the engine further tends to insure uniformity of circulation. A somewhat different plan is followed in the Kissel six in which the water enters the jacket space through an opening at the rear end and leaves the head jacket at the forward end.

There is a tendency to make the jacket space over the cylinder heads very deep, and this necessitates the provision of conical depressions at the spark plug bosses. Sometimes there are depressions of this kind in both the inner and outer surfaces of the cylinder head. These depressions on top of the cylinder block act as pockets retaining dirt and water and it would seem to be preferable to do without them if possible.

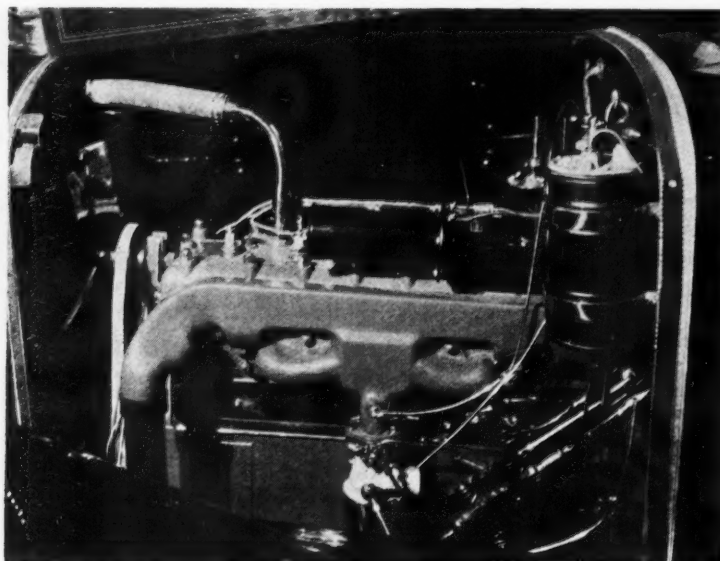
Efforts to lighten reciprocating parts continue, as engine speeds are still going up. In this connection it would be highly desirable if the lightness of the aluminum and magnesium alloys could be combined with the good wearing qualities of cast iron. So far as difficulties due to the high thermal expansion of the light alloys are concerned, these seem to have been overcome entirely, and the only thing which retards the further popularization of aluminum pistons is the opinion that aluminum alloys in pistons do not wear as well as cast iron. Quite a number of composite pistons with aluminum head and cast iron skirt have been designed, a prominent example being the Marmon. A further step in this line of development is the Fiat piston, which has cast iron wearing bands cast in the aluminum shell. In some of the latest engines the designers have reverted to cast iron in pistons to secure the advantages of the superior wearing qualities of this material, and have endeavored to further reduce their weight. Thus in the Jewett engine skeleton type cast iron pistons are used, and in the Hupmobile Eight iron pistons cast in metal molds, which on account of the greater accuracy of the



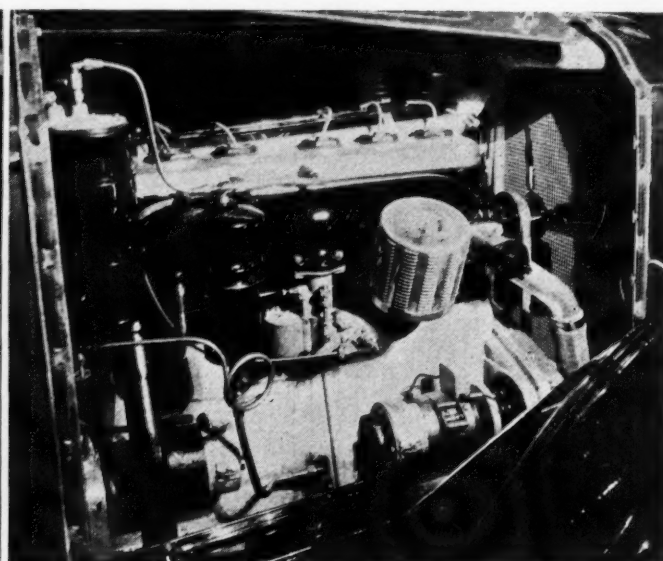
## Engine Details Sketched at the Show



1—Fan bracket on Hupmobile eight. 2—L-shaped hose pipe between engine and radiator on small Cleveland six (which is easily removable). 3—Manifolding on the Junior eight. 4—Manifolding on the Cleveland six. 5—Air preheater combined with air cleaner on Rickenbacker eight. 6—Aluminum piston of Oldsmobile engine slitted below the ring belt. 7—Hose pipe type of driving coupling used on Jewett. 8—Sectioned view of exhaust heating chamber on inlet manifold of Oakland, with two gate valves controlling the inflow and outflow of the exhaust gases. 9—Fan bracket on the Pierce-Arrow Model 80



*Manifolding on the Flint six-cylinder engine*



*The new Willys-Knight six-cylinder engine*

castings can be made with thinner walls and therefore lighter.

Duralumin connecting rods seem to be gaining in popularity, among the latest engines to be provided with them being the Hupmobile eight and the Kissel. Tubular steel connecting rods are used on the Willys-Knight six-cylinder engine.

#### **Crankshaft Dimensions**

"Husky" crankshafts are getting to be the rule, and whenever an engine is redesigned one of the changes usually made is an increase in crankshaft diameter. In the most advanced designs (from this point of view) it has long since become impossible to remove the connecting rods through the cylinders, and in the Hupmobile eight-cylinder engine a 2 $\frac{5}{8}$ -in. crankshaft is used with a 2 $\frac{7}{8}$ -in. bore. Machining the crankshaft all over is a practice that is gaining in popularity in connection with engines having one more main bearing than they have crank throws. With a cam-turning lathe this operation can be performed without great expense, and it tends to give a perfectly balanced crankshaft.

On all but the lowest priced cars force feed lubrication is now used for the engines. Usually the oil is fed under pressure to the main and connecting rod bearings, the camshaft bearings and to the rocker arm bearings (if used). Oil pumps are very generally placed in the lower part of the crankcase, but at the show a considerable number of deviations from this practice can be noticed. Some of these deviations, of course, are due to the use of a piston type pump in connection with the circulating splash system of lubrication, but gear pumps used with force feed lubrication are now also often placed outside of the crankcase, where they are more accessible. Thus in the Chandler, the gear type pump is located between the crankcase and the frame channel and is driven by helical gears from the camshaft. It has been urged in favor of the crankcase pump that the oil will run into it under the force of gravity and that it is therefore always self-priming, but if a gear pump located above the oil level outside the crankcase should become emptied of oil during a period of rest it would be proof that either the pump is badly worn or else the oil is so much diluted that it has left little lubricating value.

There have been commendable efforts to place the oil filler where it is not so difficult to reach with the or-

dinary oil can. In the new Cleveland six the filler is at the side of the cylinder block, a passage being cored through to the crankchamber, which is cast integral with the cylinders. There are no accessories on this side of the engine, and the filler therefore is most accessible. On the Peerless six and on a number of other engines the filler is formed on the timing gear case cover plate and therefore is comparatively high up.

The spear type of oil gage, which had its first extensive try-out on the Class B military truck and was later adopted for truck engines generally, is coming into wide use in passenger car engines, in various modified and refined forms. Another feature in connection with oiling systems that made its first appearance some five years ago and has recently been widely adopted is means for draining the crankcase of its oil without crawling under the car. A drain valve operable from above can be provided at very little cost and is certainly a boon to the owner who looks after his car himself.

Engine accessibility is a factor which depends to a considerable extent upon the location and method of drive of the accessories. The number of engine accessories seems to be gaining constantly, and the problem of arranging them so they shall not interfere with access to the working parts of the engine itself is certainly not an easy one.

#### **Accessories Drives**

The water pump and the generator are generally coupled in tandem at the side of the crankcase and have a common drive, the connection between the two being made by means of a flexible disk type of universal joint. In Europe, where passenger car engines usually carry a magneto in addition to the accessories which we provide, a form of coupling consisting of two metal members very similar in shape to bevel gears, and a rubber member to fill the space between them, is in wide use. As compared with the form of joint mostly used here it has the advantage that—being a solid cylindrical rotating body—it is slightly neater. As regards efficiency of operation it is not likely that there is any appreciable difference. A rather neat, compact and cheap shaft coupling, the principal member of which consists of a length of rubber hose, and used on several different makes of car, is illustrated in one of the sketches herewith (as used on the Jewett).

A common drive is frequently used for the ignition



unit and the oil pump, the distributor being mounted at the top and the pump at the bottom end of the same shaft. If the shaft is vertical and driven from the camshaft, the distributor or ignition unit comes on top of the engine, as in the Packard. Sometimes the shaft is placed at an angle so that, although the oil pump is located at the bottom of the crankcase, the ignition unit comes at the side of the cylinder block. In some engines this vertical shaft is driven from the accessories driveshaft instead of from the camshaft.

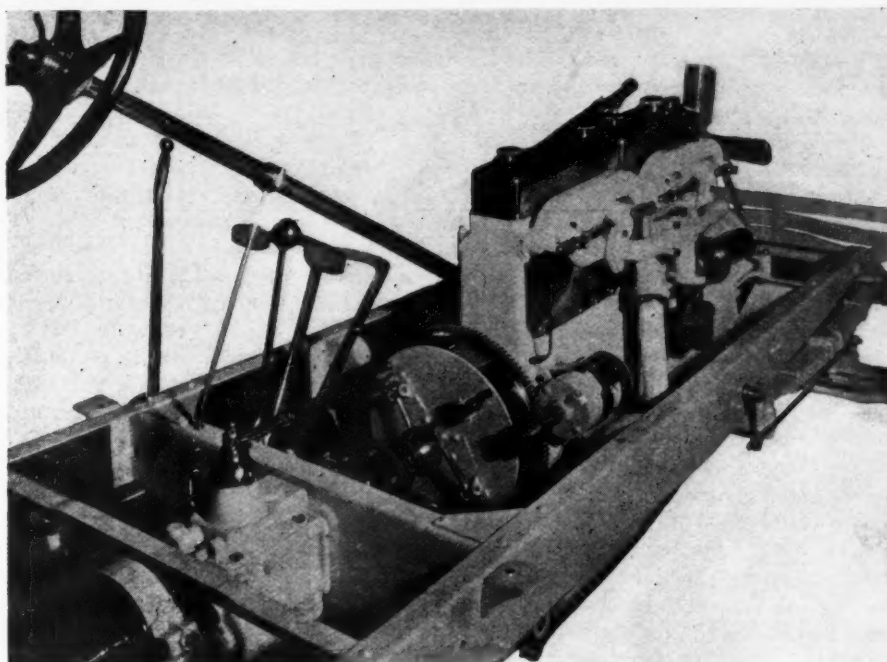
The method of supporting the engine on the frame also has received the consideration of designers. The conventional three-point support, comprising a trunnion at the forward end, is not as popular any more as it was at one time, at least not in connection with the multi-cylinder engines which make up the majority of the new designs. An interesting support is used on the Nash six. There is a tubular cross member at the rear of the engine which has a downward curvature and near the bell housing has supporting brackets fastened to it on which the rear end of the engine is supported through the intermediary of rubber cushions. Where supporting arms are cast on the crankcase they are not bolted directly to the frame side members, as was the practice in earlier years, but the frame is provided with engine supporting brackets, riveted on, on which the engine supporting arms rest.

In connection with the smaller engines it has become a common practice to use flat steel stampings for engine supporting members at both front and rear. This method is used on the new Overland Six, the new Cleveland Six, the Essex and the Chevrolet. This practically obviates all danger of breaking the supporting members and supports the engine very rigidly in the vertical direction, in which the unbalanced forces are active in four-cylinder engines, while allowing a certain amount of flexibility in the fore and after direction, which is undoubtedly desirable.

Manifold systems are still being redesigned periodically by many manufacturers, to get rid of troubles arising from incomplete vaporization and consequent imperfect distribution of the fuel charge. The use of hot spots or exhaust heated surfaces in the inlet manifold is general, although there are still a few engines in which heat is supplied only to the carburetor air and none is added to the charge after it has left the carburetor. On the

Oakland a damper control has been provided whereby the amount of exhaust heat supplied to the charge can be varied at will (see sketch). In the majority of the engines the inlet and exhaust manifolds are either cast as a unit or bolted together, and the old-fashioned individual inlet and exhaust manifolds are rare.

Fan brackets are now more neatly designed than formerly. The amount of adjustment required to take up slack in the belt is only small and can be obtained easily by means of an eccentric of moderate dimensions. In the new Piece-Arrow Six the fan is supported from the cylinder head. Adjustment is made by means of an



Powerplant of the Junior Eight built by Locomobile

eccentric which has flats milled on it for a wrench grip. The adjustment is locked by a clamping bolt. On the eight-cylinder Hupmobile engine the bracket has a swinging motion and is locked by means of a clamping bolt.

The general impression carried away from the show is that so far as engine design is concerned the past year has brought a distinct advance. There are no freakish engines at the show. That there are wide differences in degree of refinement is explained and justified by the fact that one large body of purchasers want the simplest and least expensive machine that will serve their purposes, while another class lay stress upon the character of the service furnished and a third even regard their cars as a work of art.

### When the New Models Were Described in AUTOMOTIVE INDUSTRIES

Buick . . . . .	July 10, 1924	Jewett . . . . .	Jan. 1, 1925	Rickenbacker—6	{ May 15, 1924
Chevrolet . . . . .	Jan. 1, 1925	Jordan—8 . . . . .	Aug. 21, 1924	Rickenbacker—8	{ Jan. 1, 1925
Chrysler . . . . .	Dec. 27, 1923	Locomobile . . . . .	Aug. 28, 1924	Rollin . . . . .	Dec. 6, 1923
Cleveland . . . . .	June 19, 1924	Marmon . . . . .	Nov. 6, 1924	Studebaker . . . . .	Sept. 18, 1924
Duesenberg . . . . .	July 17, 1924	Nash . . . . .	July 31, 1924	Stutz—6 . . . . .	Dec. 27, 1923
Elcar—8 . . . . .	Aug. 21, 1924	Overland—6 . . . . .	Jan. 1, 1925	Templar . . . . .	Jan. 3, 1924
Essex—6 . . . . .	Dec. 13, 1923	Peerless—8 . . . . .	Nov. 20, 1924	Velie . . . . .	Aug. 28, 1924
Franklin . . . . .	July 10, 1924	Peerless—6 . . . . .	Jan. 10, 1924	Wills-Ste. Claire—6	Jan. 1, 1925
Gray . . . . .	Jan. 3, 1924	Pierce-Arrow . . . . .	{ Jan. 3, 1924	Willys-Knight—6	{ Sept. 4, 1924
Gardner—8 . . . . .	Jan. 1, 1925		{ July 31, 1924		{ Jan. 1, 1925
Hupmobile—8 . . . . .	Jan. 1, 1925				

# Stiffer Frames Characterize Chassis Design at Twenty-fifth National Show

*Single plate clutches gaining, while cone type has almost gone.  
Four-wheel brakes now are in the transitional stage.*

By A. Ludlow Clayden

**I**T needs a very close and thorough search over the show chassis to appreciate fully the tendencies of engineering outside of engines.

There is nothing startlingly new.

The novel forms of transmission which were expected last summer have failed to appear. DuPont has adopted the Campbell transmission first sponsored by Chandler, and Apperson retains the same system which they introduced previously. While it is known that almost all the first line manufacturers have been experimenting with new forms of gearing, none but those mentioned has yet decided to depart from the old and well tried gearset. This is less surprising than it might be because of the very great average improvement in clutches during the past few years and also the much smaller gear wheel sizes. A light clutch coupled with light gears, having in themselves small moments of inertia, make gear shifting very much easier than it used to be.

In clutches opinion now is divided between single and multiple plate types, with the single gaining. The cone has almost vanished, its principal upholder from the viewpoint of quantity produced, that is, Chevrolet, having entered the ranks of single disk supporters. Light clutch action, easy steering and light brake effort now are all accepted as essentials on low priced cars as much as on those of the most costly sort.

Four-wheel brakes, of course, have made great forward strides, but they are far from universal. Manufacturers' present practice in this respect in the majority of cases must be regarded as transitional.

## The Four-Wheel Brake Situation

The struggle between the hydraulic and the mechanical systems is obviously going to be a long one. Application of hydraulic brakes has been made a fairly easy matter for most engineers and sufficient of these systems are now in use to have taken them quite out of the experimental stage. The same cannot yet be said for the mechanical systems in general, for the latter now display a heterogeneity of ideas with a strong trend toward the internal type.

Another apparent trend which may be temporary or not, is toward combination of a transmission hand brake with four-wheel service brakes. This makes far the neatest layout and is probably cheaper than using double brakes.

With the mechanical system, of course, equalization is one of the large problems. Some of the designs are so ..... complex that it seems possible that friction and lost motion may appear in service.

The only entirely new mechanical system in the show is that on the Willys-Knight six, described in the Jan. 1 issue of AUTOMOTIVE INDUSTRIES. It is a very clean, neat layout and is worthy of study because it forms an important portion of an entirely new chassis in which past practice and existing units played little part.

It is most probable that 1925, especially if it is not a

year of very intensive production, will advance the mechanical four-wheel brake a good deal further than it has advanced in the year past. The self-intensifying type like the new three-shoe Perrot-Bendix or the two-shoe Nash construction is extremely attractive from the theoretical viewpoint and will undoubtedly gain more adherents.

## Frames Stiffened

Seeing the show today, if one had not seen a show for several years, would make the frame constructions very striking, but the changes here have been so gradual that they are hardly perceived by most people. Not only for the protection of closed bodies, but also for obtaining better springing, rigid frames are essential; hence the multiplicity of massive cross members which are so much the rule now as they were the exception five years ago.

It is surprising that the use of cross tubes has not increased to a greater extent. A tubular member across the extreme front and rear ends of a frame is not uncommon, but only in rare instances are these tubes large enough to stiffen the frame greatly. A tube increases in stiffness directly as its weight, and as the square of its diameter.

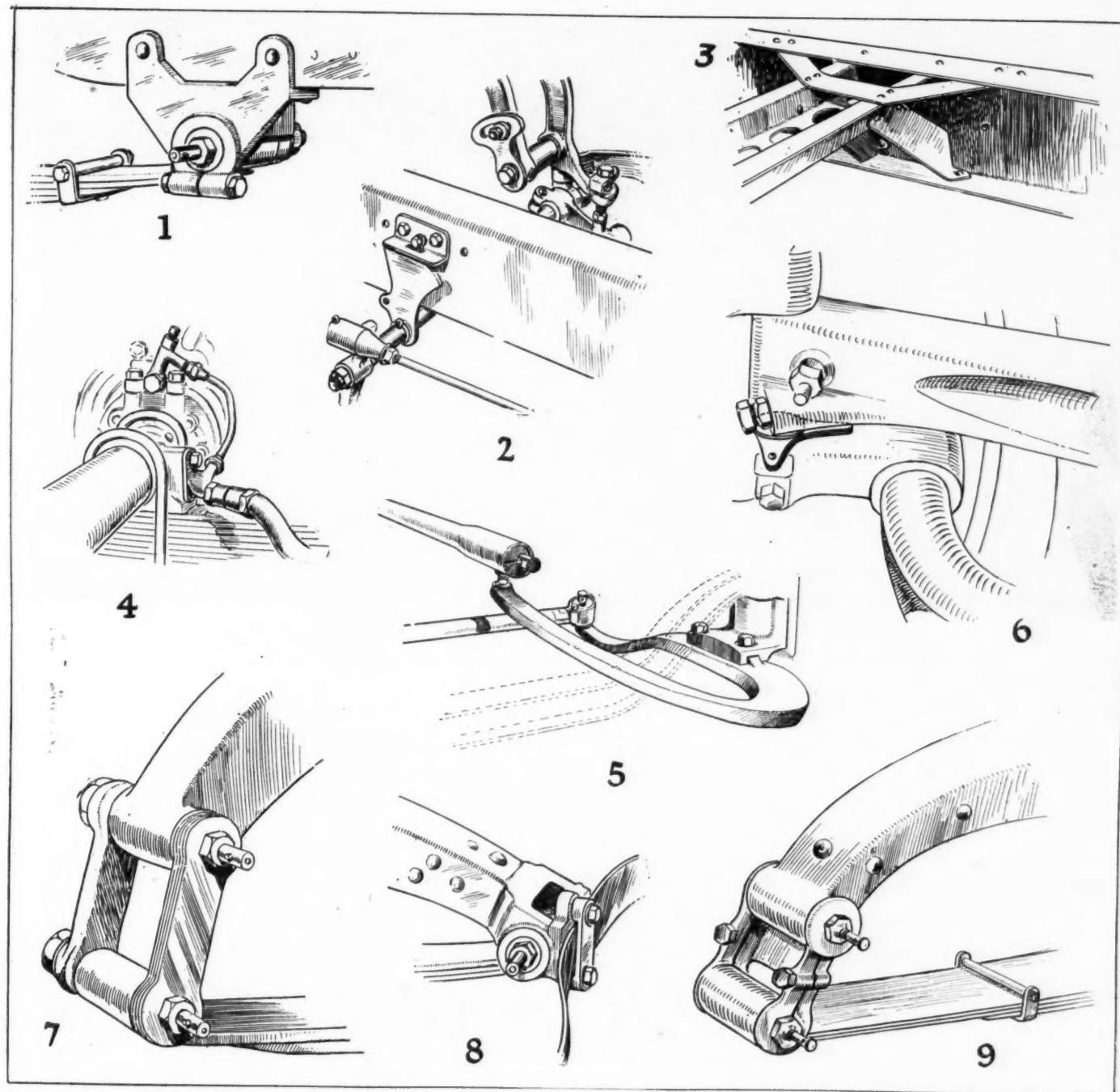
An excellent example of robust front end bracing is the Hudson, which has used this construction for a good many years, but few others are using tubes as large. Of course, at the center of the frame, where a tube will do the maximum good, it is often impossible to apply one because of the lowness of the frame rails relative to the transmission. Here it is now customary to use a quite elaborate built up member bracing the side rails against fore and aft wrenching stresses. Where these members are gusseted to the vertical parts of the side rails, they can add considerable torsional rigidity. A good example of this type is seen on the Pierce-Arrow 80.

Together with generally stiffer frames another trend is observable, this being the increasing utilization of four-point engine attachments. For the elimination of engine vibration, crankcases now are made so heavy that they can safely be utilized to stiffen up the front end of a frame. Good front end rigidity is of prime importance in the riding of a car and is important in front wheel brake operation.

Some apparently obvious possibilities in framework still are rare. The Hupmobile eight has a very neat bracket for bumper attachment made integral with the frame ends. Use of a heavy sheet of metal covering the gasoline tank and making a rear cross member is now common practice, but only a few cases are found where the attachment of this plate to the side rails is such as to enable it to function to best advantage as a twist eliminator. In this connection the rear end of the Jewett may be noted, as the plate is curved so as to give the effect of deep section and is quite rigidly attached.

The battle of the springs, which raged so fiercely a decade ago and for many years after, is almost over. The





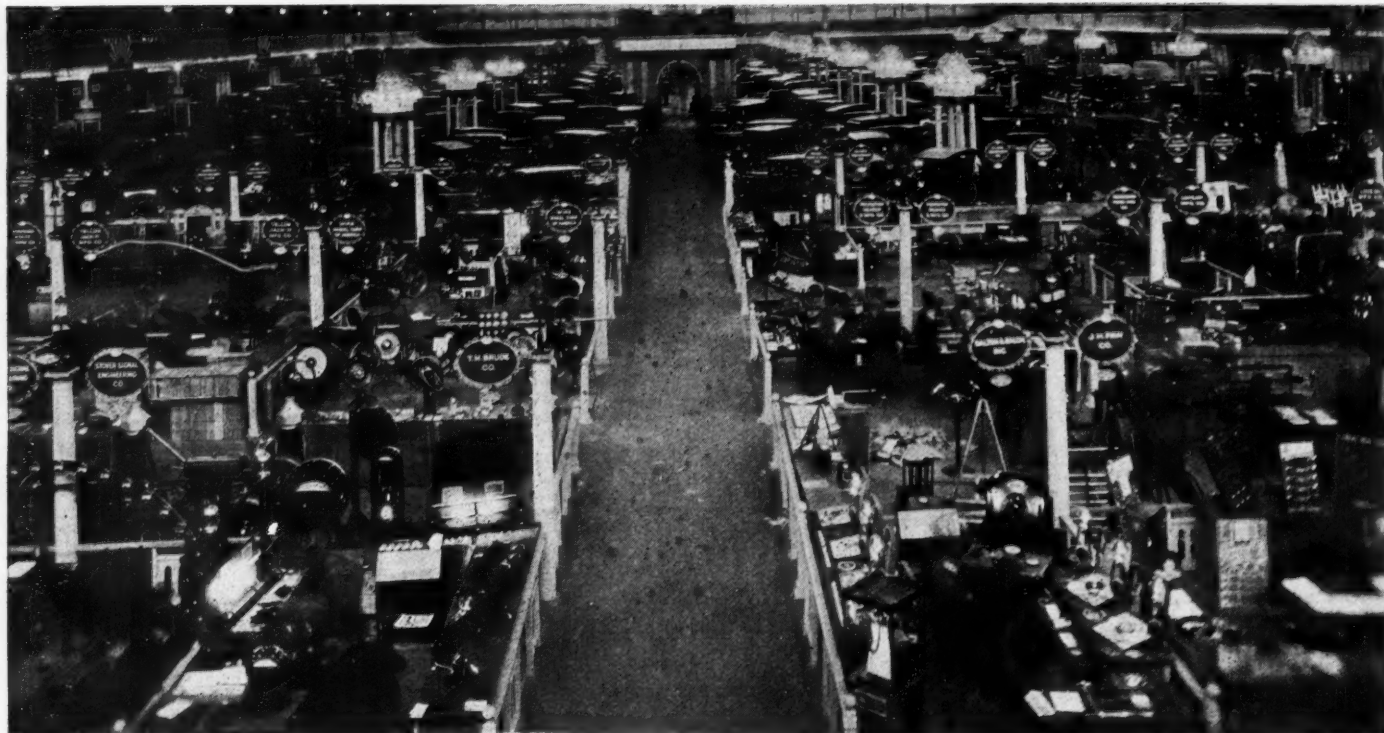
1—Front bracket of rear spring on Hupmobile eight. 2—Adjustable pedals on Nash. 3—Well braced center cross member on Pierce-Arrow. 4—Hydraulic brake connection on Jewett. 5—Double knuckle arm of novel design on Cadillac. 6—Frictional device on steering knuckle of Nash. 7—Spring shackles on Hupmobile eight. 8—Front spring horn on Hupmobile eight with provision for attaching bumper. 9—Shackle at forward end of front spring on Wills Ste. Claire

semi-elliptic is almost universal. It is also obvious that Hotchkiss drive is none too easy to mate up with modern braking requirements. The torque tube construction has held most of its old adherents and is found applied to cars of all price classifications, the new Chevrolet being a good example at its end of the scale. The Chevrolet rear end, incidentally, displays an excellent service design, since either the whole assembly can be readily removed, or any part of it withdrawn.

Changes in axles really are confined to those made necessary by four-wheel brakes.

The average car today with its balloon tires steers much easier than its prototype of two years ago did with high pressure air, and this is due mainly to reportioning, though considerable credit goes to the increased use of anti-friction bearings in kingpins and to steering gears.

A minor trend, but one of considerable interest to the service station, is seen in improved methods of spring attachment. Many of the newer cars have shackles and frame brackets in which easy adjustment for the removal of side play on the spring eyes is provided. The new Hupp uses shackles of multiple laminations of spring steel. The tightening of the bolt flattens these and their inherent spring takes up any wear. Wills Ste.-Claire uses a shackle which is split and provided with a pinch bolt, so that wear can be taken up very easily. On the Locomobile a similar appearing design has the additional feature of a powerful spring which makes the adjustment automatically. Rubber spring mountings were seen on the Durant Junior cars but do not appear as yet on the productions of other manufacturers in the passenger car field.



*No small part of the interest and attention at the New York show centered on the parts and accessory exhibits, not only with the trade but with the public as well*

## Wealth of New Parts and Accessories Shown in Attractive Setting

*Engines, air cleaners, oil filters and purifiers, gasoline pumps, vacuum systems, parts, all the many accessories from bumpers to flowers were displayed for the industry and for car owners.*

By D. G. O'Connor

**P**ARTS and accessories came into their own on the first two, the trade days, of the Twenty-fifth National Automobile Show in New York. For the first time engineering, sales and production men were given opportunity to see and hear about the infinite number of devices and articles free from the curious, milling crowds.

And trade days have been voted a success. Opening under the handicap of a raging snowstorm, given something less than the fullest cooperation on the part of some of the car sales divisions, and being the first attempt of its kind, the two days nevertheless fulfilled in no small way the hopes of the manufacturers and men who had planned them.

The further trial of the plan at the Chicago Show, together with the educational work which will be carried on, assure success for the trade days of 1926. Samuel A. Miles, manager of the New York Show, has already expressed his faith in them for next year, and the vice-president of one of the large distributing organizations of a well known make of cars stated that he wished that he could "keep the public out the rest of the week." Another manufacturer whose booth was in a far corner said that engineers from eleven different car manufacturers had visited his booth on the first day and more on the second.

Parts and accessory exhibits were grouped at one end and around the walls of the vast hall, where they all had advantageous display space. And they made the most of their opportunities. The exhibits were well displayed and well lighted, and the parts and accessory makers had men in charge of their respective booths who were both intelligent and interested in showing the products.

Everything was shown, from the essential parts necessary for all cars to flower vases and flowers, camping outfits and all the many things which add to the luxury and comfort of motor travel. There were the many tools and devices used in servicing cars. For Fords there was everything from carbureters and magnetos to bodies and radiator shutters.

Among new products displayed was a Continental six-cylinder bus engine, the bore and stroke of which is  $4\frac{1}{2} \times 5\frac{3}{4}$  in. Among the features of the new powerplant are the extensive provisions that have been made for driving accessory equipment, pressure lubrication of the wrist-pins, a new design of oil filter and a seven-bearing crankshaft with Lanchester vibration dampener.

The cylinder block and detachable head are gray iron castings, and the crankcase, oil pan and flywheel housing are of aluminum. The upper halves of the main bearings



are of the bronze backed, babbitt lined type and the lower halves are cast in the caps. The connecting big ends have spun babbitt bearings and bronze bushings at the pin ends. Pistons are of Lynite and have the piston pins locked in them.

The front and drive consists of a train of six helical gears, all of which are steel except the air compressor gear, which is of Textolite. The air compressor gear is driven by the camshaft gear, which in turn meshes with the pinion on the crankshaft. This pinion also drives an idler gear which meshes with the magneto and water pump drive gears.

Provision is made for mounting the starting motor, air compressor and gasoline pump on the right side of the engine, and the water pump, magneto and generator on the left side. Battery ignition may be used if desired, as a mounting has been provided for the distributor on the top of the cylinder block, the drive being taken through a vertical shaft driven by helical gears from the camshaft. The same pair of gears also drives the oil pump, which is located in the crankcase. The gasoline pump is driven from the oil pump shaft.

On leaving the pump, the oil is conducted through a tube to a large filter consisting of a number of concentric wire screens contained in a cast housing mounted on the left side of the crankcase at the rear. After being filtered it is distributed to each main bearing and thence through the drilled crankshaft to the connecting rod bearings. The wristpins are supplied through ducts drilled in the rods. The timing gears are also positively lubricated.

The method of preheating the air is a novel feature of the carburetion system. There is a longitudinal chamber extending along the left side of the block at the base of the cylinders. The air enters this chamber at the front and travels to the back of the engine, from which point it is carried around to the carburetor by an external pipe.

The engine is arranged for four-point support and the flywheel housing takes a No. 1 S. A. E. bell housing.

Considerable interest centered in the unique displays of the bumper manufacturers. One company had built one of gigantic size, another displayed its line of a revolving fixture—everywhere they were arranged for and succeeded in attracting attention.

Not only does the American Upright Bumper, made by the American Bumper Corp., protect the entire width of the car, but the user also receives protection through a vertical zone 14 in. in height. At the same time it does



not have excessive weight. The appearance signifies strength. It is made of tempered steel highly nicked and attractively finished. It fastens solidly to the chassis without the drilling of holes.

The Ramspring Bumper Co. is manufacturing a Royal Superspring Bumper to fit Buick, Dodge, Essex, Hudson, Hupmobile, Nash, Studebaker and Willys-Knight. Both front and rear fittings are designed especially for each car and fits only that car. The one-piece, smoothly finished ends hold the two main bars together, front and back, there being no danger of one bar pulling out or of absorbing a collision on one bar only. The triple truss construction and the two-inch bars and fittings give this bumper ample resistance.

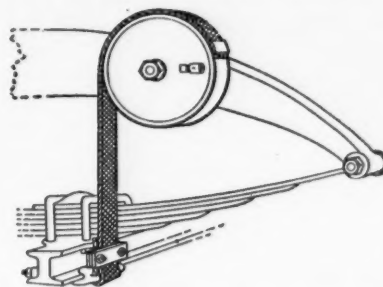
The Majestic Spring Bumper, manufactured by the Metal Stamping Co., is made of heavy oil tempered spring steel bars fastened to tubular ends and reinforced with

rugged steel clips. Its broad surface offers maximum protection. Easily and quickly installed, it will fit practically all cars.

A new addition to the line made by the Wolverine Bumper and Specialty Co. is a two-bar bumper distinguished by a special truss, bracing the front bars and giving resiliency. It is made in two sizes with bars  $1\frac{3}{4}$  x  $\frac{5}{16}$  in. and with bars  $2$  x  $\frac{5}{16}$  in.

Shock absorbers, rebound checks, stabilators and all the many devices for reducing bumps and jolts were particularly well exhibited, for in most cases the bound with and without the check was demonstrated either in miniature or in car size.

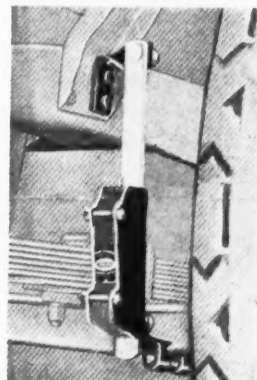
Drednaut Equalizers, made to fit all cars by the Auto Specialties Co., are designed to increase riding ease and to protect the car from vibration. Once installed, no at-



tention is necessary, as the weather proof drum is packed with lubricating grease and adjusted before leaving the factory. The strap is secured to the outside of the drum and serves as a connecting unit between the mechanism and the car axle, friction or violent function not being imposed upon it.

A new model of the well known line of oil and air shock absorbers made by Flentjo is the Hercules. It has a large central cylinder containing Flentjo oil compound and air. A piston working in this cylinder against the oil and air serves to cushion the force of the down stroke as well as the upthrow of the springs. It differs from the rotary shock absorber made by the same manufacturer in construction but is much the same in principle. The Hercules model works straight up and down and is more compact.

Kokomo Checkers, Kokomo Mfg. Co., are built on a new principle. They are designed to check the upthrow of the springs. The principle is that of a steel blade passing between two members of special friction material.

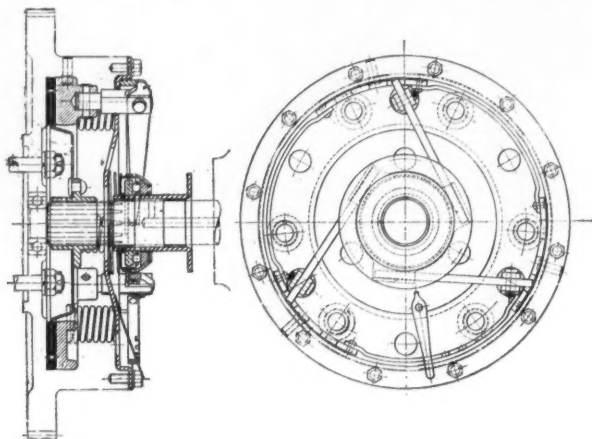


One piece of this friction material is mounted in the housing and the other is fastened to a floating wedge. They give a resistance to the movement of the blade in proportion to the force of the rebound. A lighter resistance is offered to downward movements of the car body. They are said to be easily installed.

With the Monroe Forced Draft Heater made by the Monroe Auto Equipment Mfg. Co. the register may be in-

stalled in the floor of either driving or rear compartment. It attaches to the manifold of the motor, the heated air being carried to the interior of the car through flexible tubing. Constructed mostly of cast iron, the possibility of rattling is largely eliminated. The end of the heater nearest the motor being open, the fan of the motor acts as a blower, forcing a steady stream of air to the occupants of the car. Radiation commences almost as soon as the motor is started. A touch of the foot snaps heat on or off as desired. With the valve closed, the heat is diverted down through a bypass beneath the car.

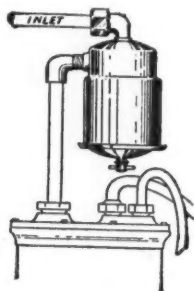
A flexible clutch made by the Merchant & Evans Co. is offered in two types, the single dry disc and the double dry disc. It is claimed that changing gears is made easy with this clutch because of the lightness of the driven disc and the absence of drag. The single plate clutches are made in 8, 10 and 12 in. sizes and the double plate in 10 and 12 in. sizes. The former are for passenger cars



and light trucks and the latter for heavy passenger cars, taxicabs, trucks and buses. Some of the special features of the clutches are: Outside stepped ring adjustment, spherical equalizing stirrup over ball bearings, heavy presser plate with ground face, multiple spring arrangement to insure uniform pressure distribution, positive release, 8 to 1 lever ratio, and the release sleeve construction to insure lubrication of ball bearings.

The Le Clair—New Era Horn made by the New Era Spring & Specialty Co., which represents a step into a new field by this bumper manufacturer, works on the tuning fork principle. A touch of the horn button energizes the tuning fork, by the action of make and break points, and a distinctive warning note is given out. Since there is no motor in the horn there are no revolving parts to wear out and no lubrication is required.

Wheeler-Schebler Carburetor Co. showed a Klean E-Z Filter. Constructed of brass and steel and copper plated, this filter is designed to keep dirt, sediment and water out of the gas. The gasoline enters at the top of the filter



from the main gasoline tank, passes down through a center opening below a filtering screen, depositing any dirt or water in the lower chamber. This allows the gasoline to filter up through a fine brass mesh, eliminating clogging

by foreign substances settling in the bottom of the chamber.

Everyman's Battery Charger made by the Austin-Brandmeier Corp is a charger for automobile or radio batteries, that can be attached to the light socket in a home. With this apparatus, the battery can be recharged over night. According to the maker the 6-amp. size costs only 1¼ cents per hour and the 2-amp. size, ¾ cents per hour for current. A 12-hour charge with the 6-amp. charger will fully rejuvenate the battery if it is not allowed to run completely flat. It has moving parts, no contacts to burn and stick and no liquids to slop. It is finished in black Japan.

Among the multitude of accessories which appeal to the many owner-drivers were:

An iceless water cooler made by the Auto Bed Camp Mfg. Co. It is attached to the side of the car by straps and gives a convenient supply of cold water for use on long automobile trips. It is made of imported linen, holds 5 gal. of water and handles like a bucket. The water in the bag is kept cold by the process of evaporation and even the hot sun has no effect on its refrigeration.

An Elgin tire valve tool made by the Pacific Rim Tool Co. renews old valve stems. It is especially adaptable for use while on the road, as ample room is provided to work the tool while the tire is on the wheel, between the spokes. A die recuts battered threads on the valve stems, thus permitting the putting on of a new cap to keep dirt out of the valve.

Autovac is an upholstery cleaner operated by the vacuum created by the engine, and is made by the Malco Products Corp. To install, a suction line of seamless tubing which comes with the outfit is inserted in the intake manifold and is brought from there to the dash and fastened to a special nozzle, which is also furnished. The cleaner itself, with a length of rubber tubing, is kept in a pocket of the car and is attached to the nozzle when it is to be used. Dirt is readily picked up by the cleaner and deposits made in a chamois bag. The fine texture of the chamois prevents any dirt reaching the engine. During the cleaning the chamois is pulled out from time to time and the dirt knocked off.

A. Schrader's Son, Inc., showed a new tire pressure gauge. It is a new type of the well known Schrader gauge, made especially for balloon tires, and gives pressure in



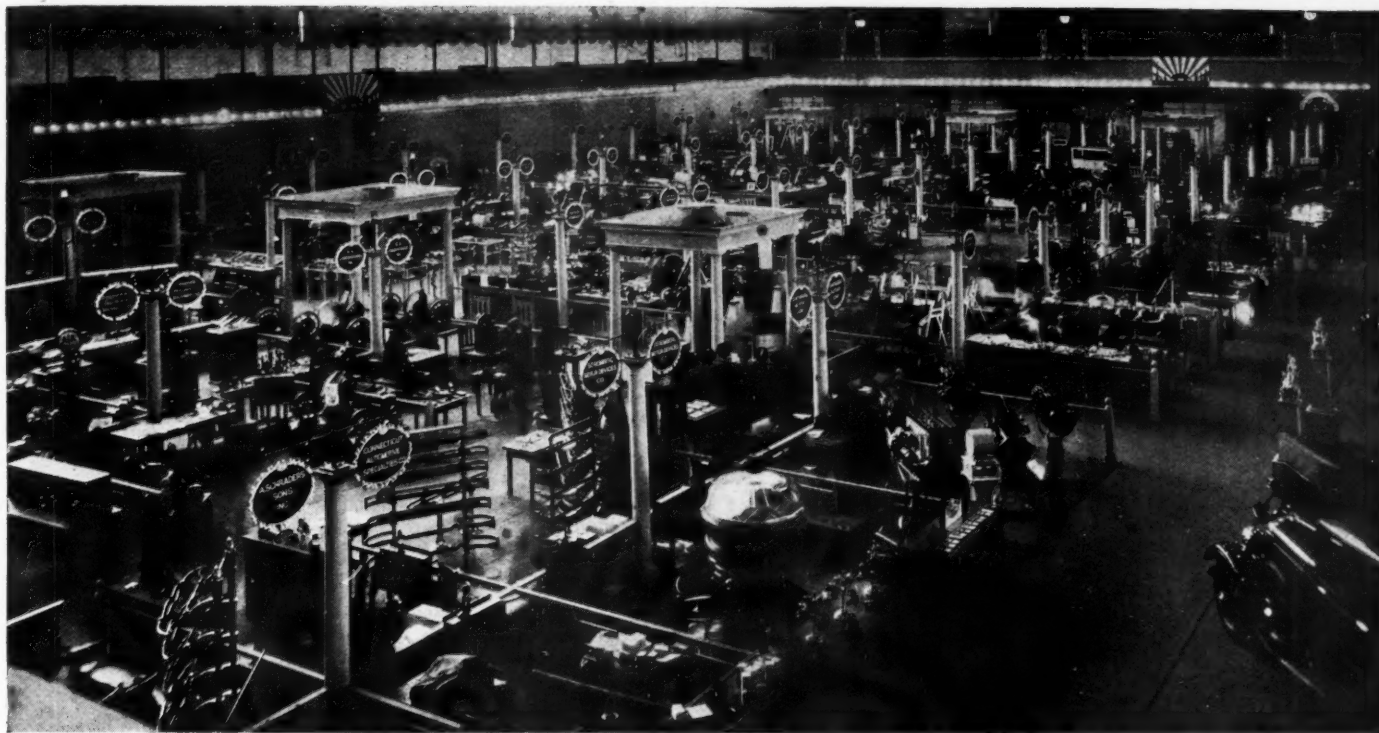
1-lb. units. It differs from the other Schrader gauges in the ball foot construction, which enables the gauge to be held at right angles to the tire valve when testing pressures.

A. B. C. Safety Straps, made by the Auto Bed Camp Mfg. Co., are for holding luggage carried on the side of an automobile. They are made of olive green trunk strap web and are said to outlast leather, as they are not affected by wet, dry, hot or cold weather. Each strap is double riveted and has a special buckle that will not tear the strap. They are made in 18, 30, 36, 42, 48 and 60 in. sizes.

The Totem Golf Bag Carrier made by the Metal Stamping Co. is quickly fastened to the running board. When not in use it may be collapsed. Through adjustment, golf bag and clubs are held firmly, no straps being required. It is finished in weatherproof nickel, ruggedly constructed.

A new body for a light chassis which is distinctive for its smart lines and staunch construction is the Country





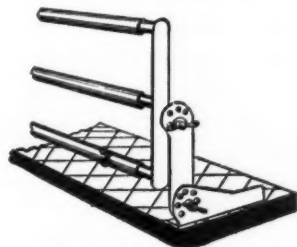
*The New York exhibit of parts and accessories is indeed a far cry from the display of twenty-five years ago. Luxurious dependability has entirely replaced uncertainty*

Club Body made by the Martin-Parry Corp. The 19-in. side panels are considerably higher than in the previous models, giving it more of a passenger car effect. The rear end panel (tail gate) is unusually strong and is supported in dropped position by two leather covered chains. The framework and posts are made of tough select growth ash and have a natural wood finish. The small panels in the sides are finished in a rich walnut. Regular equipment includes pressed steel sun visor, windshield wiper, rear view mirror, overhead hat rack, saddle pouches on inside of doors, robe strap back of front seat, front and rear floor mats, drop curtains with celluloid lights and self-closing signaling aperture at driver's side. Upholstery is furnished in either black or fancy Spanish tan with drop curtains to match. A new design winter inclosure can be furnished as extra equipment.

Headlamps and a wide variety of tail, stop, parking and back up lights were shown, some of which included the name of the particular car they were meant for.

Wings for open and closed cars were exhibited in styles from those formerly seen to those with mirror and clock built in.

The Dyett Luggage Carrier made by the Dyett Mfg. Co. is another article which may be added to any car. When not in use it folds down on the running board of the car. It may be adjusted to the width of the running

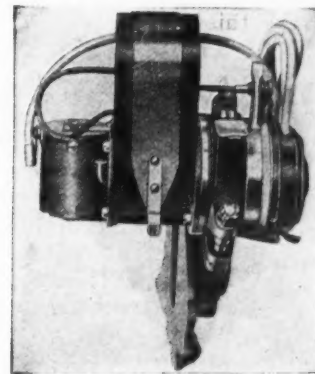


board or extended beyond it to carry articles of greater width. It is adjustable as to length and is designed to be free from rattle. It is finished in black enamel ordinarily, but may be had in other colors or nickel plated at slightly increased cost.

Spring covers, piston rings, a brake relining machine and radio devices, together with bearings of various sorts, were among the exhibits. There were jacks for cars and trucks operated hydraulically, by leverage, and by the screw method. Windshield cleaners which swept the whole breadth of the windshield as well as those which describe an arc were demonstrated in action. Oil purifying systems and air cleaners were also shown in operation.

For Fords there were, among other things, special bodies, steering gears, carbureters, magnetos, Smith wheels, and a long list of parts and accessories.

The Ross Gear and Tool Co. has developed a cam and lever steering gear especially for Ford cars, the first this company has made for them. It is similar in construc-



*Both especially designed for Fords. Left—Ross steering gear. Right—Simplex magneto*

tion to former models for heavier cars. The cam is mounted between ball bearings which take the thrust and load. Turning is accomplished with comparative ease, and driving with a minimum of road shock to the driver.

For Fords and Chevrolets exclusively is the Multiple Radiator Shutter made by the Metal Stamping Co. The multiple control feature provides for scientific regulation of the temperature of the cooling system in cold weather.

# Here and There in Foreign Markets

*By special arrangement with the Automotive Division, Bureau of Foreign and Domestic Commerce*

## Changes in Turkish Invoice

**E**FFECTIVE Dec. 1, 1924, no foreign merchandise can be cleared through any Turkish custom house without the presentation of an original invoice containing: 1. A detailed description of the goods according to the nomenclature of the Turkish customs tariff.

2. A statement of the gross and net weights of the merchandise, and

3. A certification in the following manner: "We certify that this invoice is authentic, and is the only invoice which has been made by us for the goods mentioned herein."

It is important that each consignment of merchandise shipped from the United States to Turkey be accompanied by the original invoice, giving exactly the information required by the regulations, and it is suggested that in order to avoid delays in clearance at destination, these invoices be forwarded to the Turkish consignee at the same time as the bill of lading covering the shipment.

## Norwegian Registrations

**A** SURVEY of the Norwegian automobile market, made as of Dec. 1, shows that there are approximately 19,500 cars and trucks registered, 5600 motorcycles and 2300 sidecars. The outlook for 1925 is not the best owing to financial stringencies and general economic depression at the present time. Automotive sales temporarily are checked, but an upward trend is expected by automobile dealers early in the year. Certain factors, it is pointed out, such as the topography of the country and sparsity of population, naturally mitigate against the extensive use of automobiles such as is experienced in this country.

## Madagascar Wants Catalogs

**T**HE colonial agriculture engineer in charge of the Economic Information Library and editor of the Bulletin Economique of Madagascar, has requested catalogs of all classes of American manufacturers, particularly those relating to transport material and public works machinery. Catalogs and other matter should be addressed: "Bureau de Documentation, Bibliotheque, Redaction de Bulletin Economique, Tananarive, Madagascar."

## Argentine Imports in November

**A**MERICAN motor car exporters predominated the November imports into Argentina, shipping in 1443 passenger cars, compared with 64 from all European countries. Truck imports from the United States were 54 and from European countries eight. Tractor imports during the month were 168, five from Europe.

Production of the Argentine branch of the Ford Motor Company during November totalled 1890 passenger cars, 400 trucks and 102 tractors.

## Small Car Competition in Spain

**T**HE sale of American automobiles in Spain is favorable at the present time, though increased competition with lighter cars of European make, it is noted, particularly in Central and Northern districts.

Automobile accessories are recovering from the depression caused by the signing of the German modus vivendi, which resulted in a flooding of the market with specialties bearing trade names in English. Although French tires continue to dominate the market, imports from the United States increased in November and the increase in taxation and overhead in French factories makes the American outlook more favorable.

## Financing Needed for Rumanian Sales

**I**N spite of the fact that the existing general economic conditions in Rumania are far from being satisfactory, it is the belief of some of the largest and most active dealers in automobiles and automotive products that the present market for American automotive vehicles is a good one. The thorough construction, finish and durability of American cars have contributed to their favorable position in this market, and it is believed that the field is clear for American cars, if the present difficulty of financing shipments can be overcome.

## Vienna Almost Without Cars

**E**CONOMIC conditions, coupled with overtaxation by city authorities, has made Vienna, Austria, almost an autoless city. With a population of more 2,000,000, the registration of automobiles at the present time is only 3200 private automobiles, according to figures compiled recently by city authorities, or about 1200 less than last year. This reduction is attributed solely to the economic crisis which has reached virtually all branches of business.

## Dodge Prices in Japan

**T**HE standard five-passenger Dodge Brothers touring car is now advertised at 4350 yen, fully equipped with 5 tires, magneto, bulb horn and mudguards. With the yen figuring at 40 cents U. S. gold, this price is actually lower than an individual could purchase the same car similarly equipped at the factory or from any Dodge Brothers dealer in the United States, and import it himself into Japan.



# EDITORIAL

## On to Chicago

THE trade days' experiment at the New York Show was successful. There can be no doubt about that. Parts and accessory men were particularly pleased with the results as were those car representatives who took advantage of the opportunities offered.

But only a few of the passenger car booths were properly manned during the trade days. Technical men from the factory went to the Armory on the first two days and benefited materially. Sales departments in general did not. And by their failure to be on the job they passed up an excellent opportunity to interest new dealers in their cars, to add to the prestige of their lines within the trade and to help in bringing the industry together as a unit.

One car executive who wasn't pleased with the lack of representation at his own booth said "Too often men in the automobile business adopt a hard-boiled attitude toward one another. When the public is to be around they put themselves out to be pleasant, but if it is only a dealer they don't bother so much. That condition is going to change."

More than one factory executive was surprised at the big crowd which appeared during the trade days. Many who took the whole idea rather lightly know now that it is going to be more important as time goes on.

Two trade days will open the Chicago Show this year. Factory sales departments have a chance to rectify almost immediately any errors of omission which may have occurred in New York. It will be worth while to do so.

## Eccentrated Cantilever Springs

WHERE half elliptic cantilever springs are used in the rear of passenger-car chassis, the springs are sometimes eccentrated; that is, the rear end of the half elliptic is made longer than the forward end. Some people seem to think that this gives a more flexible spring, owing to the increased length of the rear, projecting end, but it can easily be shown that if the same number of leaves of the same grading are used, the deflection corresponding to the maximum safe stress is the same in both cases.

There is only one valid excuse for placing the intermediate spring connection of such springs out of center, and that is that sometimes the design of the frame makes it necessary, or at least highly desirable. Otherwise the arrangement is entirely disadvantageous, for the reason that the loads or reactions at the two forward spring mountings are increased thereby, and in consequence also the forces and moments that tend to distort the frame.

With the two portions of the spring of equal length, the reaction at the forward end is equal to the total load on the spring and the reaction at the intermediate point of support is equal to double this load. On the other hand, if the rear section is made equal to twice the length of the forward section, then the reaction at the forward end is equal to twice the load on the spring and the reaction at the intermediate point three times that load. The bending moment on the frame created by the reaction at the intermediate mounting of cantilever springs always constitutes a difficult problem, and it is certainly poor judgment to add 50 per cent or so to this moment unless there are compelling reasons.

## Pressure Lubrication

AMONG the faults of the conventional pressure lubricating system, in which a spring loaded relief valve and an approximately constant pressure are used may be mentioned the fact that there are times when no oil is delivered to the cylinder walls and others in which a great excess is delivered.

With a constant pressure, the quantity of oil delivered depends chiefly, first, upon the viscosity of the oil and second, upon the resistance to flow created primarily by the bearing clearance. It is a well-recognized fact, however, that oil viscosity varies considerably with changes in temperature and with the proportion of fuel diluent present, while bearing clearances increase as wear takes place.

Having pointed out these facts in an article which appeared in AUTOMOTIVE INDUSTRIES for Dec. 25, Neil MacCoull makes the pertinent suggestion that it would be much better to follow practice now used on some foreign built engines and design the lubricating system in such a way that a certain adequate quantity of oil be delivered by the pump per revolution under practically all conditions by the simple expedient of omitting the by-pass valve, except, perhaps, as a mere safety valve which seldom would function as such, and letting the pressure vary as it will.

Then when viscosity is high and bearing clearances low, oil pressure automatically will be high, while if viscosity is low and clearances large, pressure will be lower, but the quantity of lubricant delivered will be the same as before.

This appears to be a simple and quite logical solution of a problem which has proved difficult. Quite likely the practical application of the idea will involve some minor difficulties, as most innovations do, but if the main objective is accomplished, the net results should prove highly profitable. At least they are worth close examination.

# Trade Days To Become Fixed Features

## Results Satisfactory to Show Managers

**Estimated That 6000 of Trade  
Passed Through Turnstiles on  
the Opening Day**

NEW YORK, Jan. 3—Trade days as a feature of the national automobile shows have come to stay. Satisfaction with the working out of the plan, which sets aside two days at the show for the trade only, was expressed both by Samuel A. Miles, show manager of the National Automobile Chamber of Commerce and Neal G. Adair, manager of the show department of the Motor and Accessory Manufacturers Association. Mr. Miles declared that the plan would be followed at national shows in the future.

It is estimated that more than 6,000 persons passed through the turnstiles at the Armory on the first of the trade days and that fully one third more than this number were in attendance the following day. All of these persons were identified with some branch of the industry.

### Views Are Varied

Widely varying views as to the trade days at the national shows were expressed by executives of car manufacturers attending. From the viewpoint of attracting dealers in larger number, it was agreed for the most part that this had failed to materialize, although the weather on the opening day was considered as probably a factor which would have cut down attendance on any day whether reserved for the trade or not.

Probably the most important criticism voiced was one to the effect that dealers were attracted in large measure to the shows to discover what cars were receiving the largest amount of attention from the general public. This not being possible on days reserved exclusively for the trade, there was not a large attendance, though even this critic said the weather again presented an alternative which would have kept dealers away regardless of any other consideration.

Factory executives for the most part were not conspicuously active at the show exhibits, though in several instances these men put in a large amount of time there and declared themselves well satisfied with the work they were able to do. One of these executives, however, said trade days could never accomplish the work that could be done at downtown hotel headquarters, and for that reason it would always be necessary to maintain the latter.

It was pointed out by show officials, however, that although dealer patronage

## COOLIDGE RECOGNIZES AUTOMOBILE'S RISE

NEW YORK, Jan. 6—Official recognition of the automobile as a mark of American progress again was given through the receipt of a telegram from President Coolidge by Col. Charles Clifton, president of the National Automobile Chamber of Commerce, on Saturday night.

"The opening this evening of the National Automobile Show, marking as it does the silver jubilee of the automobile industry," President Coolidge said, "serves as a striking reminder of the marvelous development of this industry."

"In a single quarter century it has grown to the proportions of one of the foremost interests of the country."

"Moreover, America has taken the world's leadership in this peculiarly representative modern accomplishment."

"In the development of highways, expansion of transportation and influence upon the social organization, it has produced changes so vast that even yet we cannot fully realize their vast extent, much less their implication as regards the future."

of the car exhibits was slight on the two opening days, the dealers present, most of whom went through the parts and accessory section with considerable care, had little inducement to work through the cars. Only a small minority of the car exhibits were manned with a person competent to talk with the trade; some did not even have their cars uncovered on Friday, and some had no one but porters in attendance. Dealers who inspected the accessory exhibits commented freely and in uncomplimentary terms of the failure of many of the car exhibitors to handle the expected trade contacts.

One car exhibitor who had men from the factory and the New York wholesale department on hand both days made contracts with several new dealers and signed some wholesale orders. Commenting on the failure of some of the car exhibitors to prepare for the trade day, this man stated that an innovation such as this could hardly be expected to produce satisfactory results the first year. He believed that the second trial of the plan at Chicago and educational work that can be done throughout the industry this year would assure a thorough success for the trade days in 1926.

In the parts and accessory section, where much service equipment was also displayed, not only salesmen competent to talk with the trade but sales managers and in many cases presidents and

## Dealer Optimism Develops at Show

**Sales Not Many During Opening  
Days, but Inquiries Gained  
During Week**

NEW YORK, Jan. 8—After three days of contact with the public at the silver jubilee show the metropolitan section dealers are more convinced than ever that 1925 will be equally as good a year as 1924. There are many who believe that records will be broken.

The publicity given the new models offered by nearly every exhibitor has whetted the public interest in the 1925 cars and they are flocking to the great drill shed in the Bronx in numbers that equal last year.

But the New York show, up to Wednesday, developed only a normal volume of actual sales in the booths. Two factors are believed to be strongly responsible for this. The heavy snowstorm which ushered in the show made many State roads impassable. Rumors of price cuts which are to be heard on every hand are substantiated in the public mind at least by the sweeping reductions in a few lines already announced.

Another factor that is believed to have affected sales to some extent is the slowness of the Manhattan population to patronize the show in large numbers. This year, as last year, the first few nights produced a show attendance largely composed of Bronx, up-county and southern Connecticut persons.

The New Yorkers are expected to be much more in evidence during the closing days. Some of the New York dealers have met this situation by putting on special exhibits in the Broadway sales rooms, keeping most of their selling organization there on floor duty and manning their booths with salesmen from Bronx and Westchester County branches and dealers.

However, the fact that the early show days did not develop heavy sales is not discouraging to the metropolitan dealers, because the interest of those who have visited the show and the prospects obtained insure good spring business, they say.

general managers of the exhibiting companies were in attendance throughout both of the trade days. The exhibits of members of the Motor and Accessory Manufacturers Association, which occupied nearly all the space outside the cars, particularly were competently manned. There was ample evidence of definite results of the vigorous campaign in the promotion of the trade days which the M. A. M. A. conducted throughout the fall.



# Price Revisions Mark Week of Show

## Changes Affect All Classes of Cars

### Reductions Starting in Higher Priced Lines Cause Slight Unsettling

NEW YORK, Jan. 8—An unsettling feature of the show was the movement toward price revisions that had its start on the day the show was opened to the trade and continued through the week. All classes of cars were embraced in the changes.

The movement had its real beginning several weeks before the show opened its doors, and gave promise of developing into formidable proportions and of proving as disturbing a factor at the show as it did two years ago.

Most drastic of the price cuts were those affecting the higher priced cars, Peerless slashing prices on its six-cylinder line on the opening day, the reduction ranging from \$430 to \$530. No change was made in the price of the new equiposed eight line.

#### Reductions on Overland

Willis-Overland announced sharp reductions on the Overland four, these ranging from \$35 on the open models to \$135 on the sedan. On the first of the year a more sweeping price cut had been made on the Willis-Knight four.

Maxwell lopped \$30 to \$50 from the prices of some of its models and brought the price of the sedan from \$1,345 to \$1,045.

Oldsmobile prices were increased, as were those on individual models of the Apperson and Auburn. On several of its models in the "straightaway" line, Apperson announced price cuts.

Studebaker reduced prices on all closed models, leaving the open car prices unchanged. The cuts range from \$50 on the Standard six, \$115 to \$165 on the Special six and from \$200 to \$210 on the Big six.

Wills Sainte Claire increased its lists on all models in the eight-cylinder line (B-68, 128 in. wheelbase) ranging from \$95 to \$110.

Nash and Rickenbacker lowered their prices and the two-passenger coupe of the Star was brought from \$750 to \$715.

(Price changes will be found on page 82 of this issue.)

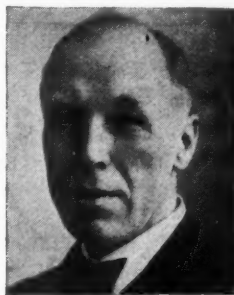
#### DUNLOP BUSINESS GAINS

NEW YORK, Jan. 7—Here on business, Sir Arthur du Cros, president of the Dunlop Rubber Co., Ltd., and chairman of the Parent Trust & Finance Co.,

### 25 YEARS PASS IN A VIVID RETROSPECT

#### AS SAM MILES VIEWS OPENING OF SHOW

NEW YORK, Jan. 6—There was no man present at the Bronx Armory on the opening night of the Silver Jubilee Show to whom the event brought more vivid and significant recollections than Samuel A. Miles, veteran manager of a quarter of a century of automotive exhibitions.



Samuel A. Miles

Mr. Miles, with a party of friends, was found in his favorite seat in the balcony overlooking the acres and acres of motor cars and automotive products that spread in a wonderland panorama under the mellow lights and scintillating silver and green background.

The lights had been dimmed at 9 o'clock and a score of vari-colored spotlights trained on the jubilee arch on an upper level of which the band was playing "Star-Spangled Banner." Nearly 10,000 faces were upturned toward the beautiful spectacle.

As Sam Miles, hands at his sides, stood erect and tense, there were tears sparkling in his eyes. The emotions that caused the tears only Sam Miles knows, but those who have been close to him during his long career as national show manager suspect that it was more than pride in his latest accomplishment, more than the inspiration of the stirring strains of the musicians, that brought the tears.

It was a mingling of these with memories of men and shows and motor cars and a lot of other things which have passed, but which in their span of effort contributed much to the crowning accomplishment of the jubilee year.

Then when the strains of the national anthem died away and applause thundered along under the arched dome of the exhibition hall, Sam Miles, show manager, turned to his friends and said: "I was thinking of that first little show twenty-five years ago and the track where the boys demonstrated to a doubting public that their crude horseless carriages actually would run."

"What have impressed me most, though," said Mr. Miles, "are the remarkable strides toward stability that have come during the last year of the industry. After a quarter of a century of unparalleled growth it has shown unmistakable evidence of settling down—and I think this, and the inauguration of the trade days at the national shows, which have been enthusiastically received by the industry and which have come to stay, are the outstanding features of the first quarter of a century of automobiles and automobile shows."

Ltd., said "Dunlop Rubber is in a very strong position today." He added that the rubber situation is much better and that he expected record Dunlop sales in 1925, with not much of a change in tire prices. Dunlop operations for 1924, he stated, should be about 10 per cent ahead of 1923, with a similar gain for 1925.

### New Halladay Plant Starts Full Operation

DECATUR, ILL., Jan. 8—The new plant of the L. F. Halladay Co., subsidiary of the Biflex Products Co., is in full operation. The factories, of concrete and steel construction, cover 18 acres.

Directors have declared the regular quarterly dividends on the preferred stock of the Biflex and Halladay companies. A quarterly dividend on Biflex common also was declared.

Sales of the combined Biflex and Halladay brands are reported as in excess of last year's records, with New Eng-

land and the Northwest showing greatest gains. Biflex export sales have reached a large volume.

### G. M. Stockholders Now Number 66,097

NEW YORK, Jan. 7—General Motors Corp. reports 36,686 common stockholders of record as of Nov. 17, 1924. The total number of stockholders is now 66,097, compared with 69,427 in the preceding quarter.

Total stockholders by quarters compares as follows:

Calendar Years	First Quar.	Second Quar.	Third Quar.	Fourth Quar.
1917	1,927	2,525	2,669	2,902
1918	3,918	3,737	3,615	4,739
1919	8,012	12,523	12,358	18,214
1920	24,148	26,136	31,029	36,894
1921	49,035	59,059	65,324	66,837
1922	70,504	72,665	71,331	65,665
1923	67,115	67,417	68,281	68,063
1924	70,009	71,382	69,427	*66,097

\*Senior securities of record Oct. 6, 1924; common, Nov. 17, 1924.

## N.A.C.C. to Study Truck Cost Figures

**Horner, at Convention, Proposes  
Committee to Recommend  
Standardization Plans**

NEW YORK, Jan. 5.—A committee appointed by the National Automobile Chamber of Commerce will make a thorough study of requirements for and present methods of cost keeping in connection with passenger and freight-carrying commercial vehicles if the suggestion approved by the N.A.C.C. Open Motor Truck Convention, held here today, is adopted by the Motor Truck Committee. Such a committee was proposed by F. C. Horner of the General Motors Corp. in his talk on "How Can the Truck Industry Standardize on Cost Figures?"

B. B. Bachman, chief engineer of the Autocar Co. and former president of the Society of Automotive Engineers, told the truck manufacturers that inferior fuel quality, not lack of good engineering practice, is responsible for the acuteness of the oil dilution and contamination problems at the present time. Dilution, Mr. Bachman said, is of recent origin. It was not present several years ago when the average quality of fuels was higher. Contamination, he said, has always been present, but it did not effect engine lubrication to any extent until dilution became common.

### Coordination Urged

Mr. Bachman said that truck engineers still have a good way to go as regards accessibility in design. He urged also that the viewpoint of the sales and engineering departments be coordinated somehow in making up truck capacity ratings. He admitted the difficulty, but stressed the necessity for such action. American truck and bus design is ahead rather than behind European practice, Mr. Bachman said.

After pointing out the urgent need for standardization of cost systems among motor truck and bus operators, Mr. Horner offered the following recommendation, which met with the approval of the assembly:

### Committee of Eleven Recommended

That a committee composed of a chairman and ten men be appointed to make a thorough study of both the requirements for and present methods of cost keeping with relation to mechanically propelled commercial vehicles both passenger and freight carrying.

That the personnel of the committee be made up of a chairman, who is one of the staff of the National Automobile Chamber of Commerce; five of the best informed men actually engaged in the operation of this form of transport in representative fields of operation, such as supervisors of fleets used in the distribution of various commodities and operators of fleets engaged in motor

## OPENING ATTENDANCE LARGER THAN IN 1924

NEW YORK, Jan. 7.—Samuel A. Miles, show manager, estimated the attendance at the New York show on Saturday night, the first night on which the public was admitted, at between 7000 and 8000. The first night attendance was slightly better than the 1924 first night attendance.

First night attendances at the Bronx Armory, however, are not comparable with first night attendance in the days when the shows were held in the Grand Central Palace. When the shows were in the hotel and theater district of New York they drew much larger opening night crowds. However, attendance for the week at the Armory last year was only a few thousand below the average weekly attendance at the downtown shows.

Trade attendance on Friday, the first trade day, exceeded 6000, and on Saturday it was somewhat higher.

haulage as a business, three men of outstanding knowledge in these matters representing the motor vehicle manufacturers and two accountants, one representing a large corporation distributing its own products by motor vehicles; the other representing a well organized company engaged in general cartage business.

That this committee be given all possible assistance to obtain reliable and complete information from every available source and after having probed the whole subject to the satisfaction of each member of the committee, make a report in which is set forth the essentials of a proper system of cost keeping applicable to the various operating requirements. The report should also include several definite instances of the value of proper cost records to the motor vehicle user.

The personnel of the committee should be most carefully selected and pains should be taken to see that those asked to serve are

(Continued on page 89)

## Bethlehem-Splitdorf Co. Incorporated in Trenton

PHILADELPHIA, Jan. 6.—Filing of papers in Trenton, N. J., for the incorporation of a \$10,000,000 company, to be known as the Bethlehem-Splitdorf Co., has made plausible the report that a consolidation plan is pending between the Bethlehem Spark Plug Co., Inc., of Bethlehem, Pa., and the Splitdorf Electrical Co., Newark, N. J.

E. H. Schwab, president of the Bethlehem Spark Plug Co., has admitted that negotiations have been proceeding. The consolidation would constitute one of the largest makers of automobile material in the world, with unlimited facilities for manufacturing radio parts and sets. Mr. Schwab predicted that a definite announcement would be made in a week.

## Rubber Association Reelects Rutherford

**All Others Returned to Same  
Positions at Annual Meeting  
in New York**

NEW YORK, Jan. 5.—W. O. Rutherford, vice-president of the B. F. Goodrich Co., was reelected president of the Rubber Association of America at the annual meeting of the organization here today.

All other officers were reelected as follows: First vice-president, G. M. Stadelman, president of the Goodyear Tire & Rubber Co.; second vice-president, C. B. Seger, chairman and president of the U. S. Tire Co.; treasurer, G. B. Hodgman, president, Hodgman Rubber Co., and secretary and general manager, A. L. Viles.

The board of directors includes E. H. Broadwell, vice-president and general manager of the Fisk Tire & Rubber Co.; Mr. Stadelman; J. C. Weston, president of the Ajax Rubber Co.; C. C. Gates, president of the Gates Rubber Co., and F. A. Seiberling, president of the Seiberling Rubber Co.

### Over 1200 at Dinner

At the annual dinner of the association in the grand ball room of the Commodore, at which there were present over 1200 executives and representatives, Francis H. Sisson, vice-president of the Guaranty Trust Co. of New York, who was the principal speaker, said that the outlook was toward business prosperity on three counts. These he enumerated as the beginning of the economic recovery of Europe, the adjustment of agricultural and industrial prices, and world-wide conservative political victories. As measures of this prosperity he cited the increase in savings bank funds and insurance policies written.

Mr. Rutherford stated that the present association had sprung from the New England Rubber Club, organized twenty-five years ago. In 1900 there were 335,000 tons used in the United States and in 1924 there were 335,000 tons used, he stated. He added: "And the dollar will buy more tires today than any other commodity. It is worth \$1.25 today as compared to its value in 1913, while the automobile dollar will buy \$1.11 worth."

### REO OUTPUT GAINS

LANSING, MICH., Jan. 7.—Reo Motor Car Co. shipments during December, 1924, were 25 per cent above those for December, 1923, with 50 per cent less Reo vehicles on the floors of dealers now than at the same time in 1923. In 1924 Reo exports made a gain of over 200 per cent. Major parts of the foreign business was done with Australia, West and South Africa, Great Britain and South America. The company has installed a new unit to its repaint department, making it possible to remove all paints and enamels within two hours.



## New Sales Heads Appear at Show

R. T. Hodgkins, Now with Rickenbacker, One of a Long  
List of Changes

NEW YORK, Jan. 6—Heading a list of important changes in sales executives which became known in the early days of the show is the naming of R. T. Hodgkins as general sales manager of the Rickenbacker Motor Co. Mr. Hodgkins, a well-known merchandising figure in the industry for many years, resigned as vice-president and sales-manager of the Rollin Motors Co. to accept the Rickenbacker appointment.

In probably no other show in the industry's history have there been so many new names found heading the sales departments of companies which are exhibiting. They are names, however, for the most part, that are new only in the sense that they hitherto had been identified with other companies. A review of the year shows it to have been remarkable in the number of changes thus made. In fact, the executives appearing with their former companies this year are practically in the minority.

### Changes Are Significant

To those in the industry these changes are significant as indicating the unusual efforts being made by individual companies to bring their sales departments to the highest points of efficiency and strength. That this forecasts unusual efforts in promoting dealer relationships and improving merchandising standards is also evident. Throughout the show there is manifested the desire to bring the selling effort to the highest point the industry has ever known.

Ranking in importance with the naming of Mr. Hodgkins to the Rickenbacker position is the naming of Frank E. Witt to be general sales manager of the Flint Motor Co. Mr. Witt recently has been in charge of the Chicago territory for the Flint company and has been identified with the factory sales departments of several companies.

Mr. Hodgkins previous to his Rollin connection had been identified with Rollin H. White for several years. Previous to this he was general sales manager of the Studebaker Corp. Before that he was sales manager of the Yale and Towne Co., through the automotive division of which he first became identified with the industry.

### Callanan Rollin Sales Manager

E. A. Callanan has been appointed general sales manager of the Rollin Motors Co., as successor to R. T. Hodgkins. Mr. Callanan has been identified with the Rollin organization for five years. Previously he was connected with the Willys-Overland Co. for a number of years, and through his connection with the Rollin and Willys-Overland organizations had an excellent opportunity to study

## RAILWAY BEDS MAY BECOME TRUCK ROADS

BOSTON, Jan. 7—Massachusetts has taken up the study of utilizing the abandoned roadbeds of steam railroads as possible highways for motor trucks, it is admitted here by officials at the State House. The fact that the Boston & Maine Railroad has announced a plan of scrapping about 1000 miles of trackage on top of statements that the New York, New Haven & Hartford Railroad was contemplating cutting off sections of unpaying routes has brought the matter to attention.

With Chairman William F. Williams, of the State Department of Public Works, in control of highways, representatives of steam roads and executives of motor organizations considering the matter for some time, it may result in legislation this year.

This may be a possible solution of the fighting between motor and bus men on one hand and railroads on the other, because of freight and passenger competition, a solution for which was expected at the recent Motor Transport Conference here.

territories and sales conditions throughout the country.

Courtney Johnson, formerly in the sales department and later assistant general manager of Dort Motor Co. is now a member of the Hudson Motor Car Co. sales organization, doing special sales service work. E. C. Morse, until recently sales manager of Wills-St. Claire, Inc., is now a member of the Chrysler Motor Corp. sales organization. Charles Gould, newly named director of sales of Gray Motor Corp., is making his initial show bow in this capacity.

### Sales Leaders at New Posts

Among other important sales leaders who have changed positions during the year and who are making their first national show appearance with their new companies are C. W. Matheson, vice-president and general sales manager of Oakland Motor Car Co.; R. H. Grant, vice-president and general sales manager of Chevrolet Motor Co., and Colin Campbell, vice-president Durant Motors, Inc., in charge of Star and Durant sales.

### SPOTLIGHT NAME CHANGED

LOS ANGELES, Jan. 6—At a meeting of the Spotlight Manufacturers Association it was decided to make eligible for membership any concern interested in lighting and automotive lighting devices, such as headlights, spotlights, auxiliary lights, reflectors, lenses, safety lights, stop signals and bulbs. It also was decided to change the name to the Automotive Lighting Association and to decrease the monthly dues.

## Dodge Announces Personnel Changes

Palmer, Huff, Carson and Phelps  
Among Those Given Higher  
Positions

NEW YORK, Jan. 6—Changes in the Dodge Brothers organization, which follow the appointment of C. H. Jennings as New York dealer, were made known at the opening of the Dodge Brothers exhibit New York show week. The exhibit, shown, as before, on the roof of the Hotel Pennsylvania, was held the first three days of the week, and will be held on Monday, Tuesday and Wednesday of Chicago show week at the Hotel Auditorium.

Mr. Jennings is succeeded as assistant general sales manager at the factory by F. S. Sanford, formerly director of distribution. F. H. Akers, formerly manager of the commercial car division, becomes director of distribution and districts.

F. B. Walker has been brought in from Seattle, where he was district representative, to become director of service. L. C. Covell, formerly Detroit district representative, has been made manager of the commercial car division.

### Palmer Export Manager

John J. Palmer has been made export manager of the company, and R. N. Harger, formerly director of advertising and sales promotion, has been transferred to London, England, where he will represent the governing directors of Dodge Brothers (Britain), Ltd.

Russell Huff, chief engineer of the company and a member of the board of directors, has been made director of engineering, and Clarence Carson has been promoted to the position of chief engineer. Mr. Carson was formerly the assistant chief engineer.

The entire advertising activity of the company again has been turned over to George Harrison Phelps, for many years director of advertising and who for the last several years, as head of George Harrison Phelps, Inc., has been advertising counsel of Dodge Brothers in connection with acting in this capacity for other accounts.

Mr. Phelps will establish a branch office at the Dodge Brothers factory to conduct, supervise and prepare all advertising. This branch office will be in addition to the main office of his company, from which he will continue to direct the affairs of his other clients.

### Factory Executives Attend

The exhibit at the Pennsylvania Hotel follows the lines of the one last year. No annual meeting is held, the company bringing in its dealers from the eastern section of the country in groups during the three days. Luncheon is served daily. All factory executives and department heads attended.

## N. A. C. C. Addressed by Morgan Partner

Over 1000 at Silver Jubilee Dinner  
—Medals Awarded 11  
Pioneers

NEW YORK, Jan. 7—Dwight W. Morrow, member of the banking firm of J. P. Morgan & Co., was the principal speaker at the silver jubilee dinner of the National Automobile Chamber of Commerce held at the Commodore Hotel last night and attended by more than 1000 members of the chamber and their guests.

During the dinner a testimonial was presented to Samuel A. Miles by President Charles Clifton for his work as show manager during the quarter of a century and medals were bestowed upon 11 pioneers of the industry who are rated as old timers by the Smithsonian Institution.

The toastmaster was Roy D. Chapin. Extemporaneous remarks were made by Neal O'Hara, humorist.

In the course of his remarks, during which he paid a tribute to the automobile as a medium of transportation, Mr. Morrow said:

There is one general principle, it seems to me, that those who are engaged in the banking business admit they know very little about. There is one general principle that is rather impressed upon them by their experience, and that is that the average man in any business when times are bad thinks that they are always going to be bad and when times are good thinks that times are always going to be good.

It is perfectly true in any business that if you get about 5 per cent more demand than supply, while that demand is being pressed and urged, it looks like 500 per cent or 5000 per cent more than the supply, and everybody is likely to act accordingly. When you get 5 per cent more supply than demand, when you get a little more production than is used, it looks as though the demand would never catch up. It is the part of human nature. Men who are engaged in business 25 years old, should remember that in the periods of depression they are apt to be short-lived and that in periods of good times they will not always, perhaps, be as good as they are at the time when men are expanding their plants.

The pioneers of the industry who were given medals are: R. E. Olds, J. D. Maxwell, Edgar L. Apperson, A. L. Riker, John S. Clarke, Rollin H. White, H. H. Franklin, Charles E. Duryea, Charles B. King, Elwood Haynes and Alexander Winton.

## Bement and Evans Form an Advertising Agency

NEW YORK, Jan. 6—Austin F. Bement, Inc., has been organized as an advertising agency by Austin F. Bement, well known as the executive vice-president and secretary of the Lincoln Highway Association, and E. S. Evans, president of E. S. Evans & Co., recently vice-president in charge of sales of Bassick-Alemite Corp. The new agency will be located in the General Motors Building, Detroit.

Mr. Bement will continue a considerable part of activity in behalf of the Highway Association, whose affairs he has directed for the last 11 years. Mr. Evans will devote a major part of his time to the work of the new agency.

## Says 1925 Requires 3,500,000 Vehicles

J. N. Willys States Business,  
Started in Fall, Should Con-  
tinue Upward

NEW YORK, Jan. 7—Markets will absorb between 3,500,000 and 4,000,000 automobiles in 1925, according to John N. Willys, president of the Willys-Overland Co., who views the new year optimistically.

"Based upon our dealer commitments for the next twelve months, Willys-Overland's contribution to this fine total will be 250,000 Overland and Willys-Knight cars of both four and six-cylinder types, valued at approximately \$300,000,000," he declared.

"Business has been moving upward since fall and should continue in an upward direction.

"The economic situation is improved by the agricultural revival at home and the betterment of conditions abroad."

Mr. Willys estimates that about 3,000,000 motor cars will be required for replacements and more than a million sold to new owners in 1925.

During 1924 the Willys-Overland Co. sold 12,000 more cars than it produced, Mr. Willys said. He declared that while 1923 was a better production year for the industry than 1924, it was his belief that the latter year exceeded the former in volume of sales. A survey of Willys-Overland dealers showed that on Jan. 1 between 8000 and 10,000 cars were in stock.

Prosperity on the farms and the effects of the Dawes plan in Europe are cited as indications of a good business year.

## Dodge Brothers Output in 1924 Reached 225,104

NEW YORK, Jan. 7—According to John A. Nichols, Jr., sales manager, here for the show, 1924 was the most successful year in the history of Dodge Brothers. He said the company in the first ten months of 1924 increased production 35.6 per cent and that figures for the remaining two months of the year would show the same percentage of gain.

Mr. Nichols stated that Dodge 1924 shipments to dealers aggregated 225,104 cars, of which 193,861 were of the passenger type and 31,243 commercial. Practically this entire total represents retail sales, he stated, as dealers' stocks at the close of the year were unusually low.

According to Mr. Nichols, Dodge Brothers ended the tenth year with a total of 1,250,000 cars built and sold. "Registration records show that more than 1,000,000 of this number are still in daily service," he added, "giving some idea of the materials and methods employed in building the car."

## Pioneers of the Industry at N. A. C. C. Banquet



Here are ten of the eleven pioneers of the industry with the medals conferred on them at the N. A. C. C. banquet. From left to right they are: Standing—J. D. Maxwell, Edgar L. Apperson, A. L. Riker, John S. Clarke, Rollin H. White and H. H. Franklin. Seated—Charles E. Duryea, Charles B. King, Elwood Haynes and Alexander Winton. The eleventh, R. E. Olds, was unable to remain for the taking of the picture



## U. S. Registrations Reach 17,743,406

**Total for Passenger Cars and  
Trucks in 1924 Shows Gain  
of 2,462,111**

NEW YORK, Jan. 8.—Total passenger car and truck registrations for the United States in 1924 amounted to 17,743,406, an increase of 2,462,111 over the twelve months ending Dec. 31, 1923, a gain of a little over 16 per cent. This is shown by the preliminary survey just completed by AUTOMOTIVE INDUSTRIES.

One more State, Illinois, crossed the million mark, making a total of five which have more than 1,000,000 cars registered, namely: California, Illinois, New York, Ohio and Pennsylvania.

More complete data on the registration figures for 1924 will appear in AUTOMOTIVE INDUSTRIES next week.

Registrations by States follow:

States	Total Registrations	Passenger Cars	Trucks
Alabama ..	157,262	138,574	18,688
Arizona ..	57,439	49,872	7,567
Arkansas ..	142,307	124,807	17,500
California ..	1,321,480	1,126,956	194,524
Colorado ..	212,700	196,500	16,200
Connecticut ..	215,000	181,000	34,000
Delaware ..	38,200	29,000	9,200
Dist. Col. ..	91,726	81,810	9,916
Florida ..	221,234	187,042	34,192
Georgia ..	209,300	183,300	26,000
Idaho ..	69,850	62,000	7,850
Illinois ..	1,119,236	978,428	140,808
Indiana ..	651,705	566,736	84,969
Iowa ..	633,903	592,566	41,337
Kansas ..	410,891	370,951	39,940
Kentucky ..	229,339	206,064	23,275
Louisiana ..	177,900	150,900	27,000
Maine ..	124,702	105,338	19,364
Maryland ..	209,804	192,668	17,136
Massach'tts ..	672,315	580,489	91,826
Michigan ..	856,953	774,316	82,637
Minnesota ..	503,436	465,164	38,272
Mississippi ..	135,600	122,000	13,600
Missouri ..	547,000	493,000	54,000
Montana ..	79,695	68,824	9,871
Nebraska ..	309,600	278,100	31,500
Nevada ..	18,387	14,887	3,500
New Hamp. ..	71,712	64,170	7,542
New Jersey ..	500,000	400,000	100,000
New Mexico ..	41,750	40,350	1,400
New York ..	1,400,470	1,170,866	229,604
No. Carolina ..	305,756	278,348	27,408
No. Dakota ..	117,046	112,364	4,682
Ohio ..	1,246,000	1,086,000	160,000
Oklahoma ..	374,425	348,425	26,000
Oregon ..	192,615	177,558	15,057
Pennsylvania ..	1,228,691	1,043,691	185,000
Rhode Isl'd ..	90,652	74,588	16,064
So. Carolina ..	163,382	147,530	15,852
So. Dakota ..	143,400	132,000	11,400
Tennessee ..	199,550	179,200	20,350
Texas ..	801,712	738,958	62,754
Utah ..	79,233	69,382	9,851
Vermont ..	62,250	58,000	4,250
Virginia ..	253,582	219,950	33,632
Washington ..	295,443	253,257	42,186
W. Virginia ..	190,134	167,963	22,171
Wisconsin ..	525,000	475,000	50,000
Wyoming ..	43,639	38,831	4,808
<b>Total</b>	<b>17,743,406</b>	<b>15,598,723</b>	<b>2,144,683</b>

## Saturation Point Here, Says C. F. Kettering

NEW YORK, Jan. 8.—Speaking at the Oldsmobile New York show dinner, C. F. Kettering, General Motors vice-president, told dealers that "the saturation point is now here, and don't let any statistician tell you that it isn't." He added: "It's here, and it remains for the industry to prepare to do business on that basis."

Out of the year's experience with over-

production has come the Oldsmobile manufacturing program, by which it holds its factory output in strict alignment with retail movement of cars. Cars are now built only ten days in advance of the period that field reports indicate they will pass into the hands of the retail buyer. This, said President A. B. C. Hardy, can be maintained only by dealers keeping the factory informed through its monthly report system of the actual number of cars they have and sales possibilities in their fields.

Present prices on Oldsmobile are based upon a production of about 66,000 cars in 1925, Mr. Hardy said. Prices have been figured on that basis and do not permit of any reductions. He asked dealers not to be stampeded by the present price fluctuations. Most automobile prices of 30 days ago were justified by costs. Present reductions are unjustified and indicate only a panicky feeling which can only pass when manufacturers adopt resolute policies.

Coach models are here to stay, Mr. Hardy said. The year will witness large sales of models of this type, which to a considerable extent will divert buying from the more established models.

## Plan Airship Service to Coast and Europe

BOSTON, Jan. 7.—Organization of a company to develop commercial dirigibles to transport passengers across the continent and to foreign countries is being planned here by Major General Clarence R. Edwards, U. S. A., retired; James Jackson, State treasurer, about to retire, and Arthur V. Davis, president of the Aluminum Co. of America. Other Boston and New York financiers are interested in the formation of the corporation, which is to have \$50,000,000 capital.

Preliminary plans call for the building of two large lighter-than-air craft at a cost exceeding \$2,000,000 each. These and others will be used in transporting passengers, later freight, with Boston as the terminal.

Engineers, they state, estimate that the trip to the Pacific Coast can be made in two days or less, and they allow the same time for crossing to London. Passenger rates are to be the same as existing train and steamship fares.

## Over 600 Electrical Men Attend Annual Banquet

NEW YORK, Jan. 7.—Over 600 electrical men attended the second annual automotive electrical banquet at the Hotel Astor yesterday. This is more than double the number that were present at the first affair, held last year during the show. L. E. Murray, editor of *Automotive Electricity*, toastmaster, introduced the manufacturer representatives, of which over 100 were present.

The banquet was followed by an entertainment and general get-together. So successful was the feature that it has been decided to hold another automotive electrical banquet in Chicago during the show week there.

## Chalfant Chosen to Head M.A.M.A.

**Succeeds G. B. Griffin as President—Chapin and Ericson  
New Directors**

NEW YORK, Jan. 8.—E. P. Chalfant, chairman of the Gill Manufacturing Co., was elected president of the Motor and Accessory Manufacturers Association at a meeting of the board of directors here today. Mr. Chalfant succeeds G. Brewer Griffin.

Other officers elected were as follows: First vice-president, H. L. Horning, president of the Waukesha Motor Co.; second vice-president, C. H. L. Flintermann of the Michigan Steel Castings Co.; third vice-president, Eugene B. Clark, president of the Clark Equipment Co.; treasurer, L. M. Wainwright of the Diamond Chain & Manufacturing Co.; secretary and assistant treasurer, J. M. McComb, vice-president of the Crucible Steel Co.

At a meeting yesterday afternoon C. E. Thompson, president of the Steel Products Co., and Mr. Chalfant were re-elected directors. H. W. Chapin, president of the Brown-Lipe-Chapin Co., and M. B. Ericson, treasurer of the Biflex Corp., were elected as new members of the board.

The annual banquet of the association was held at the Hotel Astor last night and was one of the outstanding features of show week entertainments. As usual, no speeches were delivered.

## N. A. D. A. at Meeting Told of Bright Prospects

NEW YORK, Jan. 5.—Informative ideas and sound selling principles in great number were told a gathering of over 200 dealers at the meeting of the National Automobile Dealers Association at the Hotel Commodore today. C. A. Vane, general manager of the association, opened the meeting.

James H. Collins of the research division of the Class Journal Publishing Co. spoke on the outlook for 1925 and the opportunities the year offered. Particularly interesting were the facts he presented regarding 9,500,000 new owners of automobiles created during the last five years and the admonition that a great portion of the profits in sales for the next few years will be the direct result of concentrated effort upon these owners.

Equally interesting were his figures showing that more than 3,500,000 automobiles have been scrapped in the last five years. These figures illustrated that there is an enormous market created yearly among those people who find that the utility of their present car has come to an end.

Harry M. Fancher, C. P. A., and secretary-treasurer of Tom Botterill, Inc., Denver, spoke on dealer accounting matters.

## Overland 6-Cylinders Meet Dealer Demand

Introduced Also on Willys-Knight  
in Response to Requests  
from Field

NEW YORK, Jan. 7.—The introduction of the six-cylinder models on both the Overland and Willys-Knight lines was in response to a dealer demand for more complete coverage of the automobile price classes, said Overland executives as the show opened.

The opinion expressed was that, under present conditions, it was impossible, or at least undesirable, for dealers to have only a single line, no matter what the price class. The reaction of the Overland dealers to the announcement of the two new lines was said by these executives to bear out completely the company's belief.

The new lines will be merchandised through the same channels and under the same distribution policies as have been in effect with the older lines. No changes of any sort are contemplated, although contracts for 1925 in some cases have been altered somewhat.

Company executives would say but little concerning production plans, except that limited output would be reached on the two newcomers during January. It was specifically stated that there would be no forcing of these lines on dealers and that production would run, once it had gotten under way, in accordance with demand, which executives indicate should be large.

The output plans have been worked out on careful studies of sales over many years, but the company, according to plans, has such control that it can readily shift to lower or higher levels, as the necessity may turn out.

The trade day plan for the show has met with the enthusiastic support of the Overland executives. Dealers were crowded about the Overland booth within a few minutes after the doors were opened on Friday and, to quote one of the factory men, it was readily apparent that Overland would be strongly in favor of their continuance.

Overland is going into the new sales season with no important changes of factory or company personnel.

## Dodge Canadian Plant to Start in February

TORONTO, ONT., Jan. 7.—Dodge Brothers' new Canadian plant at this place, scheduled to begin operations in February, will take the place of the one established several years ago at Walkerville, across the river from Detroit.

The plant will be a factory of real productive capacity, not merely an assembling plant. The buildings acquired in Toronto were erected by the government for munitions work during the World War. Facilities are available for

one of the largest automobile plants in Canada. The plant originally cost \$1,250,000 and subsequent improvements represented \$500,000.

A subsidiary company, Dodge Brothers (Canada), Ltd., incorporated under the laws of the dominion, will conduct the Canadian business. E. P. Clarkson is general manager.

## Ternstedt Men Form Old Timers Club

DETROIT, Jan. 6.—The sixth annual dinner of the Ternstedt Mfg. Co. to its executives and foremen, held at the Statler Hotel, was featured by the formation of a Ternstedt Old Timers' Club. Silver medals were presented to 44 charter members. The medals are emblematic of five years of service and are numbered according to the seniority of the employees. Medal No. 1 was given to Wesley E. Miller, a shop executive, and No. 6 to Paul W. Seiler, president.

In keeping with the spirit of Ternstedt dinners, the entertainment for the most part was given by members of the organization and consisted principally of plays on the personalities of executives and their recreations during the year.

Mr. Seiler made the only speech of the evening, urging a continuance of the close cooperation and good fellowship which have marked the progress of the organization.

## Wanner Reorganized as Delaware Company

NEW YORK, Jan. 7.—Announcement has been made here of the incorporation, under the laws of Delaware, of the Wanner Malleable Castings Co. to take over the Wanner Malleable Castings Co. of Indiana. It has a capital of 25,000 shares of 8 per cent cumulative preferred of \$50 par value and 120,000 shares of \$5 par value common stock. A special meeting of the old company has been called for Jan. 12 in Chicago, for the purpose of approving the proposed changes.

Holders of the Class A stock of the old company under the plans are to receive one-half share of new 8 per cent preferred and four-fifths of a share of new common for each share now held. Holders of Class B stock are to receive two-thirds of a share of new common for each share now held.

According to officials, the changes were brought about for the purpose of simplifying the company's capital structure.

## REO SHIPS TO SAN JUAN

LANSING, Jan. 6.—Six motor buses of the "pay-enter" type will be shipped by Reo Motor Car Co. to San Juan, capital of Porto Rico, as soon as special bodies selected by the buyers have been built. The vehicles are to be used in city transportation in San Juan. The buses will be left-hand drive and the bodies windowless because of the tropical climate.

## Open Model Passes as Factor in Plans

With Beginning of This Year  
Operators Are Rushing Closed  
Car to the Front

NEW YORK, Jan. 7.—The year 1925 will witness the passing of the open car as a factor in the production and, consequently, the merchandising plans of most of the large manufacturing companies of the industry, according to the views of executives as expressed during show week. Not only are many large companies not showing open cars, but the sentiment that "we don't care if we don't sell an open car all year" seemed to rule in the statements of those responsible for the selling plans of many of the large companies.

Merchandising plans of most of these companies are built around the expectancy of a large volume of buying in low-priced closed models. Even companies which are not offering closed models that are conspicuously lower priced than their open types are thoroughly convinced that the closed will outsell the open. It is a noteworthy fact, however, that most of the large producing companies are showing low-priced closed cars or are bringing their usual run of closed cars down approximately to open car prices.

So much is it expected that demand will run almost exclusively to closed cars and that dealers will make their biggest selling effort on these models, that several manufacturers have frankly stated that they will make no effort to stimulate open car buying through advertising or any other form of cooperative sales effort. This policy will be maintained at least through the year. Unless there are developments which indicate that open cars still have a considerable measure of popularity, these will be cut from the lists and will be manufactured by these companies only to meet export demand.

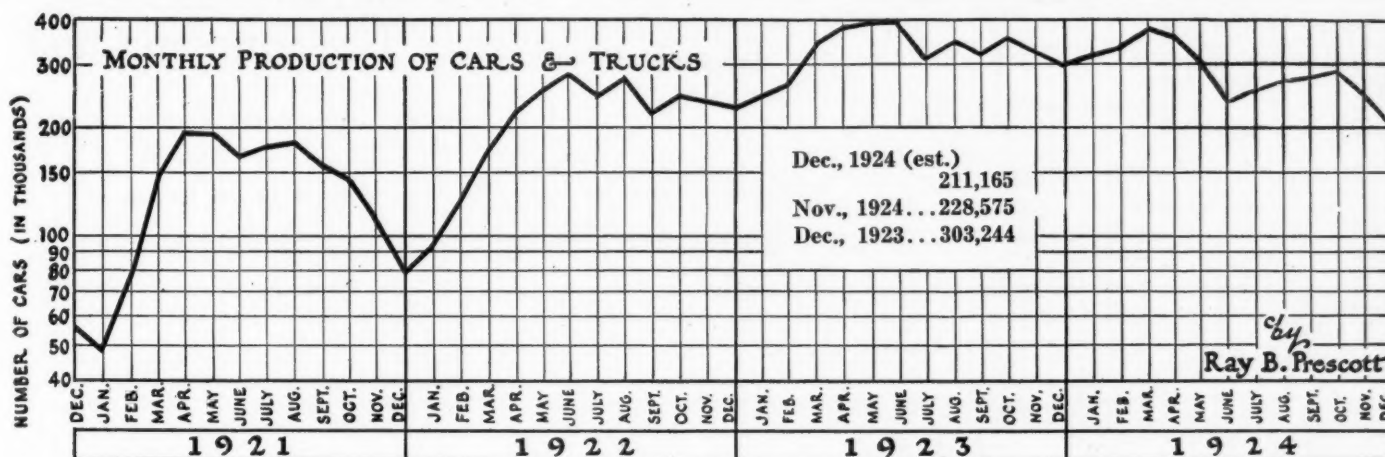
Demand for the low-priced closed cars is expected to cut into the sale of the usual run of closed cars to some extent also, but in no sense to the extent that it is expected to obliterate the open car sale. Coupes will continue to reign as the favorite of the business and professional man, though in many cases higher priced than the coach or other low-priced closed type, and sedans are expected to maintain a large popularity among those who like the superior fittings and conveniences of the usual high-grade four-door vehicle and who are not influenced directly by price considerations.

## HUDSON SCHEDULES LARGE

DETROIT, Jan. 7.—The Hudson Motor Car Co. started the year with larger schedules than any during 1923. January production was set at 17,600 cars, February at 18,700 and March at 20,400.



## DECEMBER OUTPUT IS PLACED AT 211,665



### Total for Year 1924 Placed at 3,560,613, Down 11.2 Per Cent

NEW YORK, Jan. 6.—Production of 211,665 cars and trucks in December, with the last three days estimated, is indicated in reports submitted at the meeting of the directors of the National Automobile Chamber of Commerce here today.

Output for the year is estimated at 3,560,613 cars and trucks. This figure is lower than that published in the preliminary facts and figures issued by the chamber, as it is not inclusive of the production of all Canadian factories.

December output as estimated is a decrease of 7.4 per cent under November, 1924, and a decrease of 30 per cent under December of 1923. In 1923, December output was 6.3 per cent below production in November of the same year.

The year's estimated production falls 11.2 per cent below the mark established in 1923, but is 37.6 per cent above that in 1922.

#### Exports Gain 29.4 Per Cent

WASHINGTON, Jan. 7.—Automotive exports from the United States during 1924 aggregated \$220,000,000, and were 29.4 per cent more than those of 1923, which totaled \$170,000,000, according to calculations of the automotive division of the United States Department of Commerce. The figures are based on the actual export figures for the first 11 months of 1924 and on the calculated amount for December.

Practically all classes of automotive products have shared in this increase, with passenger cars and trucks predominating. One of the outstanding characteristics of the automotive export

### December Production Estimate Shows 7.4 Per Cent Decline, as Compared with Output of Factories in November

NEW YORK, Jan. 6.—According to estimated output for December, a decline of 7.4 per cent is shown as compared with the previous month. December output is placed at 211,665 cars and trucks compared with 228,575 in November.

The following table gives the statistics for the full year of 1924:

	Output		Carloads		Driveaways		Boat	
	1924	1923	1924	1923	1924	1923	1924	1923
January .....	316,282	243,561	46,474	35,423	41,489	39,072	1,024	728
February .....	367,532	276,960	52,224	36,137	42,594	43,620	427	882
March .....	382,494	355,097	54,545	44,995	41,555	63,017	495	1,888
April .....	373,214	382,763	48,030	46,102	37,741	60,483	4,156	5,028
May .....	312,876	394,217	35,510	45,402	32,756	62,357	8,338	12,818
June .....	245,829	378,618	26,046	40,291	25,205	59,110	7,321	13,494
July .....	262,919	328,121	27,166	32,837	26,190	46,946	7,297	10,135
August .....	279,075	345,315	30,200	38,371	28,240	45,936	7,538	10,055
September .....	290,981	327,556	32,754	36,030	28,124	39,689	7,150	8,466
October .....	289,370	365,194	32,500	42,309	28,450	37,970	5,750	7,673
November .....	228,575	313,024	29,200	37,537	23,000	31,305	5,000	6,538
December ....	*211,665	303,241	*31,852	36,113	*20,814	30,330	*900	3,984
Total.....	3,560,613	4,011,670	446,714	471,547	559,681	559,885	65,663	81,689

\*Partly estimated

Motor vehicle production segregated as to cars and trucks is as follows:

1924				1923			
Cars		Trucks		Cars		Trucks	
January .....	287,353	28,929		January .....	223,822	19,739	
February .....	336,371	31,161		February .....	254,782	22,178	
March .....	348,356	34,138		March .....	319,789	35,298	
April .....	337,045	36,169		April .....	344,661	38,102	
May .....	279,455	33,421		May .....	350,460	43,757	
June .....	217,935	27,894		June .....	337,442	41,176	
July .....	237,668	25,252		July .....	297,413	30,708	
August .....	251,551	27,524		August .....	314,431	30,884	
September .....	260,171	30,810		September .....	298,964	28,592	
October .....	257,915	31,455		October .....	335,041	30,153	
November .....	201,575	26,884		November .....	284,939	28,085	
December .....	*189,000	*21,000		December .....	275,472	27,772	
Total.....	3,204,395	354,637		Total.....	3,637,216	376,444	

\* Estimated.

trade, the department declares, is the growth of exports in 1924, as contrasted with the decrease in production. Basing its figures on the first 11 months of 1924, the department found that the decrease in production, compared with the first 11 months of 1923, was 10.7 per cent, while the increase in exports was 1.01 per cent.

This calculation is based on cars and trucks produced in the United States and Canada during the first 11 months of 1924, numbering 3,353,000, compared with 4,086,997 in 1923. The exports of these two classes, during the 11 months of 1924, amounted to 6.5 per cent of production, compared with a ratio of 5.4 per cent exported in 1923.

# PRICE CHANGES DURING SHOW WEEK

NEW YORK, Jan. 8—Price changes as announced during New York show week follow:

## Studebaker

Standard Six	Old Price	New Price
5-pass. Country Club Coupe	\$1,395	\$1,345
5-pass. Coupe	1,495	1,445
5-pass. Sedan	1,595	1,545
5-pass. Berline	1,650	1,600
Special Six		
4-pass. Victoria	2,050	1,895
5-pass. Sedan	2,150	1,985
5-pass. Berline	2,225	2,110
Big Six		
5-pass. Coupe	2,650	2,450
7-pass. Sedan	2,785	2,575
7-pass. Berline	2,860	2,650

## Peerless

	Old Price	New Price
5-passenger coupe	\$2,950	\$2,495
5-passenger sedan	2,995	2,565
7-passenger sedan	3,295	2,765
7-passenger limousine	3,470	2,925

## Oldsmobile

Roadster	\$875	\$885
Sport roadster	985	985
Phaeton	875	890
Sport phaeton	1,015	1,025
Business coupe	1,045	1,055
Coupe	1,175	1,185
Coach	1,065	1,075
Sedan	1,250	1,275
De Luxe sedan	1,350	1,375

Balloon tires have been added to Oldsmobile models as standard equipment. A new panel body delivery wagon has been built, priced at \$1,030.

## Star

	Old Price	New Price
2-passenger coupe	\$750	\$715

## Nash

2-door sedan on special "6" chassis model	1,295	1,225
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## Rickenbacker

Six-Cylinder Model

3-passenger roadster	1,695	1,595
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## Apperson

Six-Cylinder

5-passenger sport phaeton	1,695	1,850
3-passenger coupe	1,985	2,350
5-passenger sport sedan	2,295	2,395
Straightaway Eight		
Sport phaeton	2,800	2,550
Sport sedan	3,750	2,850

## Wills Ste. Claire

"C-68 (Custom Built)—"8"

2-pass. Roadster	\$3,185
5-pass. sedan	4,085
7-pass. Sedan	4,100
5-pass. Brougham	4,100
7-pass. Limousine	4,285

"6-68"

2-pass. Roadster	\$2,485
5-pass. Grey Goose Trav.	2,485
7-pass. Touring	2,385
4-pass. Coupe	2,985
5-pass. Brougham	3,185
5-pass. Sedan	3,185
7-pass. Sedan	3,285
7-pass. Limousine	3,385

## Maxwell

Special sedan	\$1,245
(The Travelers' sedan and the special phaeton have been discontinued and the roadster is now made only on order.)	

## Overland

Four-Cylinder Line

	Old Price	New Price
Roadster	\$530	\$495
Phaeton	530	495

Coupe	695	635
Sedan	850	715
Coupe-Sedan	585	585

## Auburn

6-43 Model

Sport touring	\$1,795	\$1,595
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## Rickenbacker

Six-Cylinder

Couch brougham	\$1,695
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## Moon

Series A

Roadster	\$1,250
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## Maxwell

	Old Price	New Price
Phaeton	\$ 895	\$ 895
Club coupe	1,025	995
Club sedan	1,095	1,045
Sedan	1,345	1,095

## Beeson and Associates

### Form Advertising Firm

TOLEDO, Jan. 6—Sterling Beeson, Inc., a new national advertising corporation formed here with an Ohio charter, brings together five men well known in the automobile advertising field. Sterling Beeson, Frank A. Kapp, John O. Munn, H. Reed Sturgeon and Robert S. Cummings are the principals.

After years of newspaper experience, Mr. Beeson became one of the founders of Myers-Beeson-Golden, Inc., of which he was vice-president at the time of the formation of this new Toledo company. Mr. Kapp was "idea man" at the Willys-Overland Co., later advertising manager of Mitchell Motors Co. and then vice-president and general manager of the Automobile Trade Directory. For some time recently he has been secretary of the Charles H. Fuller Co., Chicago.

John O. Munn for nine years was advertising manager of the Willys-Overland Co. Later he organized the firm bearing his name, specializing in complete merchandising service for motor car dealers.

Mr. Sturgeon came to the Willys-Overland advertising department in 1914 from F. B. Stearns Co., Cleveland. Later he was made advertising manager of the John N. Willys Export Corp.

Robert S. Cummings has been in agency business for fourteen years with Theodore MacManus, Inc., Detroit, and the Martin V. Kelley Co., Toledo.

## BUICK NOT TO CUT PRICES

NEW YORK, Jan. 6—Buick Motor Co. will not reduce prices. "We have no intention of reducing prices," President H. H. Bassett says. "Prices of steel and other materials have not declined, and there is nothing in the situation to warrant a reduction."

## Road Builders Hear U. S. Bureau Chief

### Traffic Problems and Motor Transportation Discussed at Annual Convention

CHICAGO, Jan. 7—Road construction from the scientific and practical standpoints, traffic problems and motor transportation held the center of the stage here at the annual convention of the American Road Builders Association. The convention was in session at the Congress Hotel the first three days of the week. About 500 delegates were present, with J. H. Crawford of Washington, D. C., presiding.

In connection with the convention there was a large exhibition of road construction machinery at the Coliseum, a display open to the public and viewed by many thousands of people, despite its technical nature. Much of the equipment shown was motorized and there were a number of new introductions of interest to the road engineer.

Those in charge of the exhibits reported high interest on the part of contractors who turned out in large numbers. The contractors were generally optimistic respecting the 1925 outlook for road building.

One of the principal speakers was Thomas H. McDonald, chief of the bureau of public roads at Washington. "Traffic has developed overnight," he declared. "In many areas of dense population the utilization of highway transport has been slowed down and the normal and entirely justifiable use of motor vehicles definitely curtailed."

Mr. McDonald said that the chief benefit of the federal aid system has been the establishment of a plan for the future.

## Rate Increase Voted at United Kingdom Meet

NEW YORK, Jan. 8—The United Kingdom freight conference yesterday voted an increase in automobile accessory rates ranging from 10 cents to 20 cents per cubic foot. The new rate is 60 cents per cubic foot, flat.

Considerable sentiment developed in favor of a general advance in rates on account of increased operating costs due to the higher prices of fuel oil, but action was deferred until the meeting of the conference in Montreal on Feb. 6. The Canadian members of the conference will then have an opportunity to give their views on the subject.

The present tariffs are effective in most cases until April 30, so that there will be ample time for consideration of a change in policy and for making the necessary plans to put it into effect.



# NEW MODEL PRICES ANNOUNCED AT SHOW

NEW YORK, Jan. 5—Prices of new models were announced at the show as follows:

## Wills Ste. Claire

An entirely new line of custom built bodies is being offered on the B-68, 128 in. wheelbase, eight-cylinder line, with prices ranging from \$3,185 to \$4,285. All body models, with the exception of the five-passenger phaeton and the five-passenger brougham, have been discontinued from the eight-cylinder, A-68, 121 in. wheelbase chassis. No change in price has been made on the two remaining models.

The prices on the new line together with those on the new six-cylinder models follow:

B-68 (128 in. W.B.) "8"		
	Old Price	New Price
4-pass. roadster	\$2,875	\$2,985
5-pass. traveler	2,975	3,085
7-pass. phaeton	2,875	2,985
4-pass. coupe	3,675	3,785
5-pass. sedan	3,775	3,885
7-pass. sedan	3,800	3,900
5-pass. brougham 4 d.	3,800	3,900
7-pass. limousine	3,990	4,085

## Auburn

Eight-Cylinder Model—"8 Eighty 8"		
Four-passenger sport roadster	\$1,975	
Four-passenger club roadster	2,075	
Four-passenger sport brougham	2,250	
Five-passenger sedan	2,350	

Four-Cylinder		
Phaeton		\$795

## Chandler

Five-passenger sport phaeton	\$1,585
Comrade roadster	1,795

## Cleveland

No. 43 Chassis		
Five-passenger coach	\$1,295	
Sport sedan	1,725	
Five-passenger sport touring	1,295	
No. 31 Chassis		
Phaeton	\$ 895	
Sedan	1,195	

## Kissel

Eight-Cylinder		
Two-passenger speedster	\$2,485*	
Four-passenger speedster	2,585*	
Five-passenger de luxe brougham	2,985	
Five-passenger Victoria	2,985	
Two-passenger inclosed speedster	2,985*	
Seven-passenger sedan	3,485	
Berline sedan	3,585	

\*Prices include six wire wheels.

## Six-Cylinder

Two-door five-passenger brougham	\$1,895
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## Stearns-Knight

Model "S" Chassis		
Sport coupe	\$3,395	
Sport Brougham	3,395	

## Locomobile

Junior Eight		
Phaeton	\$1,785	
Sedan	2,185	
Brougham	2,285	
Junior Six		
Phaeton	\$1,600	
Sedan	2,000	
Brougham	2,100	

## Rickenbacker

Eight-Cylinder Line		
Coach brougham	\$2,395	

## Apperson

Straightaway Eight		
Four-passenger brougham	\$2,800	

## Nash

Advanced Six Line		
Four-passenger Victoria, 127-in. Wheelbase	\$2,090	
Two-door sedan, 121 in. Wheelbase	1,485	

## Pierce-Arrow

"80" Chassis		
Four-passenger sport phaeton	\$3,095	
Four-passenger coupe	3,695	
Two-passenger runabout	2,895	

## Reo

Sport roadster	\$1,685
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## Stanley

Five-passenger phaeton	\$2,500
Five-passenger sedan	3,300

## Star

Coach	\$750
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## Marmon

Seven-passenger sedan	\$3,370
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## Mercer

Five-passenger phaeton	\$4,500
Sport sedan	6,200

## Dodge Brothers

Five-passenger special coach	\$1,195
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## Flint

No. 55 Chassis		
Four-door brougham	\$2,750	
Roadster	1,950	

## Velie

Four-door coach	\$1,450
Sport roadster	1,650

## Du Pont

Six-Cylinder		
Two-passenger roadster	\$2,600	
Five-passenger phaeton	2,600	
Seven-passenger phaeton	2,750	
Five-passenger touring sedan	3,400	

## Chevrolet

Roadster	\$525
Phaeton	525
Coupe	715
Coach	735
Sedan	825
Chassis	425
Utility Express chassis	550

## Jordan

132-in. Wheelbase		
Seven-passenger sedan	\$3,250	

## Lexington

Concord special sedan	\$2,445
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## Oakland Inaugurates School for Dealers

PONTIAC, MICH., Jan. 6—W. M. Chamberlain, recently appointed director of sales development, announces that merchandising schools have been established by the Oakland Motor Car Co. for the benefit of its dealer organizations.

## Gramm—Kincaid Form New Company

Lima, Ohio, Organization Will Make Complete Line of Trucks and Buses

LIMA, OHIO, Jan. 7—B. A. Gramm, for many years identified with the manufacture of motor trucks, and R. M. Kincaid, recently vice-president and general manager of the Garford Motor Truck Co., have organized Gramm & Kincaid Motors, Inc., with headquarters in this city for the manufacture of a complete line of motor trucks and buses.

Mr. Gramm, who is president and chairman of the board of directors of the company, built his first motor truck in 1901, and devoted himself exclusively to truck manufacture since 1906. In 1911 he moved his plant to Lima from Bowling Green, Ohio.

Mr. Kincaid, vice-president and treasurer, was first identified in the industry with Walter P. Chrysler, who was connected with the Buick Motor Car Co. at the time. During the war he was affiliated with the Curtis organization and after that was associated with the U. S. Light & Heat Corp. He became assistant to the president of Garford on March 1, 1924, and three months later was appointed vice-president and general manager.

Eugene Lippincott, business man of Lima, will be secretary of the company.

## Moon Entertains 150; New Model Coming

NEW YORK, Jan. 7—The Moon Motor Car Co. entertained nearly 150 at its first annual luncheon to dealers during show week at the Biltmore on Wednesday. President Stewart McDonald announced that Moon soon would be on the market with an eight-in-line. While no details are available, it is understood that the new car will be of 240 cu. in. displacement, will be built by Continental to special Moon specifications and designs and that it will have a wheelbase of 128 in. The price will be under \$2,000.

It is planned to manufacture 10,000 of the sixes and 5000 of the eights during the coming year and a large advertising campaign is to be undertaken.

It was announced that the Moon company had sold 196 more cars in 1924 than in 1923 and that exports had increased over 30 per cent. Since 1920, Moon has moved from 47th place to 24th place in car production.

## FORD PLANTS RESUME

DETROIT, Jan. 7—Ford Motor Co. has resumed operations in all departments on a schedule of approximately 150,000 cars and trucks a month.

## "Ambassador" Name Changed to "Hertz"

Car Built Exclusively for "Drive-It-Yourself" Trade—Of Sturdy Construction

NEW YORK, Jan. 6—The "Ambassador," produced by the Yellow Cab Manufacturing Co., hereafter will be known as the "Hertz," taking its name from John Hertz, president of the company. It is to be used solely for the "drive-it-yourself" trade, which the company believes will show vast gains in the next few years, and is of exceptionally sturdy construction.

The Hertz car is to be merchandised under a unique plan which does not include the automobile dealer. As described by P. L. Emerson, of the Yellow Cab Mfg. Co., the selling process is one of merchandising a "For Hire" business rather than vehicles. The Hertz cars will be sold only to drive-it-yourself business operators, of whom Mr. Emerson says there are more than five thousand in the United States at the present time.

The plan provides for close inspection of every phase of the drive-it-yourself operator's business and the running of the business using Hertz cars according to methods outlined by the Yellow Cab Manufacturing Co. and based on its own experience in operating large fleets of taxicabs and buses over a long period of years. A per diem charge is to be made for the inspection service that goes with the sale of the Hertz car under the Hertz plan.

### Selling Policy Changed

The company announces that its policy of selling trucks has been changed, the truck division now operating through dealers. In the past Yellow trucks have been marketed to consumers, who have been fleet owners for the most part, through its three branches in New York, Chicago and San Francisco. It is planned now to branch out from the fleet owning field and appeal to individual purchasers.

The three branches will continue to be retail sales outlets, the dealer's connections being direct with the factory. Authorized service stations are now established in the principal cities of the country, so that servicing facilities for the trucks will not be difficult to locate.

While no schedule of operations of the truck division has been set to take care of the expected demand from the individual consumer, a tentative program of 5000 trucks a year has been fixed.

### MARMON BREAKS RECORD

INDIANAPOLIS, Jan. 7—All previous December production records were broken in 1924 by the Nordyke & Marmon Co., according to G. M. Williams, president and general manager. The production for the month exceeded by 92 per cent the production for December, 1919, which held the previous high

record. The large number of orders received following the announcement of the new Marmon was responsible for the new record. Mr. Williams stated that shipments of the new cars in November exceeded by 107 per cent the shipments in October and bettered by 64 per cent the shipments for October, 1923.

## North Carolina Favors 6 Per Cent Gross Bus Tax

RALEIGH, N. C., Jan. 6—The committee of five State officials named by the last general assembly to make recommendations for regulation of the motor bus companies in the State is understood to have reached a tentative agreement to report favorably a tax equal to 6 per cent of the gross earnings of the companies, according to John W. Hester of Oxford, attorney for State Association of Bus Companies.

Mr. Hester said that he had been informed of the prospective recommendation by Highway Commissioner Frank Page, chairman of the committee. The attorneys expressed the belief that such a rate would be too high and would not encourage expansion of motor bus lines. He has been engaged in checking up with the corporation commission on the taxes paid by railroads.

Only three States in the Union have adopted such a tax on gross earnings, Mr. Hester declared, California being one of the number levying 4 per cent.

## First Ford Freight Starts South with Parts

NEW YORK, Jan. 7—After taking on her first New York cargo, the Oneida, pioneer of the Ford Motor Co. fleet of freighters, sailed Tuesday for Jacksonville, New Orleans and Houston to make deliveries of automobile parts to assembly branches. The loading was done at her pier in Brooklyn.

This loading of an entire cargo of automobile parts for 5000 trucks and cars, direct from freight cars to a ship, is an innovation that has attracted attention in railroad and shipping circles.

On Jan. 3 the steamship Onondaga, sister ship to the Oneida, sailed from Rosario, Argentina, with a cargo of linseed and is due to arrive here Jan. 27.

## Bosch December Business Sets New High Record

SPRINGFIELD, MASS., Jan. 6—December business of American Bosch Magneto Corp. sets a new high record for this time of year, officials say, while orders for the next six months are the largest in several years. Initial production at the rate of 5000 a month of B-battery eliminating devices for use with radio sets has been started by the company.

The work of appointing distributors for the new product has not been completed, but A. H. Bartsch, general sales manager, expects the distribution organization will be completed by Jan. 15.

## Rehe Made Receiver of Westcott Motor

Action Is Based on \$5,000 Note of Company, Indorsed by Its President

SPRINGFIELD, OHIO, Jan. 7—Joseph M. Rehe, secretary-treasurer of the Westcott Motor Car Co. of this place, has been appointed receiver of the company by Judge Smith Hickenlooper of the United States District Court at Dayton. His bond was fixed at \$25,000 and his salary at \$400 a month.

H. G. Root, Oliver H. Anderson and H. S. Kissel were appointed appraisers. They are to complete their work and report within one month.

The application for the appointment of a receiver was filed in the Dayton court by Paul C. Martin, attorney for John R. Hurley of New York City, one of the creditors.

The petition says that this action is deemed best for the protection of the creditors and the defendant "to the end that said corporate property and business may be preserved free from interference by its creditors until such time as its property may be sold or liquidated in such manner as to preserve it as a going concern or until such further order as to the sale of its property shall be made by this court in order to satisfy the claims of its creditors."

The action is based on a note for \$5,000 given by the company and indorsed by Burton J. Westcott, its president, which has not been paid.

### Stock Book Value \$400,000

The petition says that the company has been in operation eight years; that it has at this time approximately \$400,000 book value of manufactured products, goods in process of manufacture and in stock used for the manufacture of automobiles.

The company, according to the petition, has assets and properties in excess of its liabilities, other than its capital stock liabilities, but is not able to procure sufficient funds to meet and discharge sundry debts from 135 different firms totaling \$825,000. The value of the assets is in a large measure dependent upon the existence of the company as a going concern and in its ability to supply repair parts.

### Automobiles Ready for Delivery

The company has completed twenty-five automobiles ready for delivery and about thirty-five automobiles which are partly constructed. As a result, the petition says, in order to prevent great loss the company must be maintained as a going concern. Certain parts incorporated in the cars belong to other manufacturers, and a trustee with the company holds these cars jointly until the parts are paid for.



## Continental Motors Earns \$2,502,523 Net

Report for 1924 Year Shows  
\$1.42 a Share on Common, a  
30 Per Cent Gain

DETROIT, Jan. 6—In its statement to stockholders for the fiscal year ended Oct. 31, 1924, Continental Motors Corp. shows a net profit after Federal taxes of \$2,502,523, which is equivalent to \$1.42 a share on the 1,760,845 shares of no par value common stock outstanding. This compares with net earnings of \$1,937,453 in the previous year, a gain of 30 per cent. Total operating profits amounted to \$4,654,375, against \$3,886,196 the previous year.

During the year there was set aside for depreciation of plants and equipment at Detroit and Muskegon, \$1,143,982. This, President R. W. Judson stated, may appear large, but is in line with the conservative policy of the corporation to maintain facilities at high efficiency for low cost production.

Net plant investment is shown at \$21,598,308, and current assets at \$12,152,302, with current liabilities of \$1,484,194 and no cash indebtedness to banks. Cash on hand and in banks is given as \$4,774,537, an increase of \$3,233,238.

President Judson in his remarks to stockholders said:

Recent developments in the agricultural and industrial fields have conclusively proven the adaptability, efficiency and economy of the gasoline motor as a unit of motive power. This has resulted in a substantial and growing demand for our specialized products by manufacturers of road building machinery, portable air compressors, concrete mixers, hoisting machinery, excavating shovels and dredges, railroad equipment, mining machinery and also by motor boat builders.

In foreign fields we are in a particularly gratifying position. With the duty removed from automobile accessories in Great Britain and the inability of European manufacturers to produce motors in large enough volume to sufficiently lower their costs we anticipate a greatly increased business.

With these new fields to serve, in addition to increasing schedules from our passenger car, truck and bus customers, we expect for the year 1925 capacity utilization of our present facilities.

## Mercer Motor Starts Foreign Shipments

NEW YORK, Jan. 6—Mercer Motor Car Co. reports shipments of cars for export this week, with foreign and domestic demand distinctly encouraging. The company is now in limited production and will gage its subsequent output by demand. Fifty men are employed in the plant at Trenton.

No inventories remain on hand from the time of the receivership, and new materials have been purchased for the construction of cars which have been shipped to meet export and domestic orders.

Manufacturing operations were resumed some time in October, after a cessation of eight months, by a new company of which Frank Curran of Curran & McDevitt of Philadelphia is president. John L. Kuser, Jr., is vice-president of the company, and William E. T. McDevitt, secretary and treasurer. W. A. Smith is general manager and acting sales manager. W. S. Haines is superintendent.

## Michigan's Automotive Exports Reach \$94,541,521

WASHINGTON, Jan. 6—Automotive exports from Michigan for the first nine months of 1924 totaled \$94,541,521. Exports of all commodities manufactured in the State, according to statistics compiled by the United States Department of Commerce, totaled \$136,500,000 for the nine months' period. The automotive exports the first three months of the year were \$32,018,590; second quarter, \$35,913,564, and the third quarter, \$26,609,367.

Largely through its automotive industry, Michigan now ranks eighth on the list of 48 States, from a manufacturing standpoint. It was one of eight States to do more than \$100,000,000 worth of foreign export trade for the first nine months of 1924. The seven States preceding it on the list were New York, with \$551,681,312; Texas, \$395,968,000; Pennsylvania, \$219,868,170; Illinois, \$174,867,678; New Jersey, \$164,819,616; California, \$163,164,505, and Louisiana with \$151,267,281.

## Nash January Orders Break Past Records

KENOSHA, WIS., Jan. 7—With January orders already on file exceeding total shipments for any previous January, Nash Motors Co. entered 1925 with every indication of a continuance of the demand which has kept its plants busy night and day practically ever since Aug. 1, when the Nash advanced and special six series cars were announced. Last month was the best December in the history of Nash Motors, showing a gain of 22 3/10 per cent over the previous best December, in 1923.

Nash shipments for the last six months of 1924 were 11 per cent greater than for the first six months, the first half of the year including, of course, the busy spring period. In the last six months of 1924 Nash also exceeded, in point of shipments, the last six months of 1923 by 11 1/2 per cent.

## REYNOLDS ORDERS TREBLE

DETROIT, Jan. 6—Reynolds Spring Co. reports orders for release of springs in the first quarter of the new year equal to more than three times the shipments in the fourth quarter of 1924. The molding division at the Jackson plant is running on a 24-hr. shift to turn out electrical and radio parts to meet the increased demand.

## Motor Stocks Rise as Show Is Opened

Activities on New York Stock Exchange, Especially in Equipment Company Shares

NEW YORK, Jan. 7—Automotive stocks registered their optimism as to the ensuing year from the sounding of the very first gong at the opening of the automobile show. Especially did the securities of some of the equipment and accessory companies register enthusiasm on the opening trade day.

Stromberg Carburetor opened Friday on the New York Stock Exchange at 70 and closed at 76 1/2, up 6 1/2 points for the day. Stewart-Warner Speedometer Corp. common opened the same day at 70 1/2 and closed at 75 1/4, up 4 1/2. Stromberg showed an additional gain of 1 1/2 at the close on Saturday, after having reached 79 1/4 at the opening. Stewart-Warner closed Saturday at 75.

Fisher Body common, which advanced 77 points from 163 to 240 last year, registered a gain of another 6 points on Friday and 1 point on Saturday. Hayes Wheel, which showed a low of 32 and a high of 52 1/2 last year, resumed its activity with the opening of the show.

It closed up 1 1/2 at 38 1/2 on Friday and on Saturday closed at 42 1/2, up 1 1/2 points, after having reached a high of 43 1/2.

Mack Trucks closed on Friday at 119 1/4, up 3 3/4 points, while White Motors closed on the same day at 72, up 1 1/2 points, which was the same closing price on Saturday.

General Motors and Maxwell Motor stocks had registered considerable gains previous to the show, as also had Nash Motors. The latter reached 201 1/2 on Friday and closed at 200, up 1 1/2 points. Previous to the opening of the new year Nash common registered a low of 96 1/2 and a high of 204.

Yellow Cab gained 2 points on Friday and 1 1/2 points on Saturday, closing at 41 1/2. Its high for last year was 85 1/2 points.

## Hanson Top Merged with Whitney Machine

HARTFORD, CONN., Jan. 7—A merger of the Hanson Tap & Gauge Co. with the Hanson-Whitney Machine Co. has been effected and the combined interests will be operated under the name of The Hanson-Whitney Machine Co.

Joint offices will be maintained in a number of the leading industrial centers by the Whitney Manufacturing Co. and the Hanson-Whitney Co., in both of which Clarence E. Whitney, president and general manager of the Whitney Manufacturing Co. is interested.

Two offices already have been opened, one in the General Motors Building, Detroit, and the other in Machinery Hall, Chicago.

## Many Companies Dine Dealers During Show

**Flow of Oratory and Floats Started Earlier Than Usual This Year**

NEW YORK, Jan. 8—Dealer luncheons and dinners were started earlier in show week this year than in other years.

The first luncheon of the week was held for Lincoln dealers on Friday. This was followed by a Stanley steamer dinner in the evening, when merchandising plans for the Stanley for 1925 were discussed.

On Saturday night H. M. Jewett, president of the Paige Motor Car Co., addressed Paige-Jewett dealers at a dinner and declared that general business conditions held out promises for the greatest year in Paige history.

The following week was filled with engagements for dealers. C. W. Nash, president of Nash Motors, addressed his dealers and declared that there would be no forcing of cars on the trade this year. E. H. McCarthy, sales manager, said that while the company expected closed cars to be in greatest demand in 1925, the open car was not to be regarded as a thing of the past.

Speaking at the annual dinner at the Hotel Plaza, New York, Jan. 7, A. R. Erskine, president of the Studebaker Corp., stated that by spring the company would add five more body models to the line, bringing the total to 20.

### Chrysler Celebrates Anniversary

The first anniversary of the Chrysler company was celebrated with a dinner to 500 Maxwell-Chrysler dealers, who were addressed by Walter P. Chrysler.

At the dinner of the Hupp Motor Car Co., O. C. Hutchinson, sales manager, read telegrams from 26 key cities of the country reporting an attendance of 400,000 at the first showing of the new eight.

S. E. Ackerman, sales manager, delivered the feature address at the annual Franklin Automobile Co. dealers' luncheon Wednesday at the Commodore, at which over 500 persons, including officials and "old timers," were present. Mr. Ackerman reviewed the history of the Franklin car, stating that the company is the fifth oldest manufacturer of gasoline propelled cars in the country.

The luncheon of Oakland dealers Wednesday at the Commodore was the largest meeting of Oakland dealers ever held, according to W. R. Tracy, assistant director of sales, who presided. Addresses were made by Alfred P. Sloan, Jr., president of General Motors Corp., and George H. Hannum, president of Oakland Motor Car Co.

### FORD BUSY AT DES MOINES

DES MOINES, IOWA, Jan. 7—The Ford Motor Co.'s Des Moines branch shut down Dec. 24 for inventory, resumed a

week ago with a force of 1000 and O. H. Perkins, manager, announced that the company anticipated a "wonderful year ahead not only in the automobile industry, but in every other line." Production schedule has not been fixed, but the plant was assembling 200 cars daily when the shutdown came. It has a 300-a-day capacity.

## Franklin Establishes an Export Department

SYRACUSE, N. Y., Jan. 7—S. E. Ackerman, sales manager of the Franklin Automobile Co., announces the organization of an export department, in charge of S. W. Dorman, who has had extensive experience in merchandising automotive products in foreign markets.

For a number of years the company has been shipping cars abroad, principally to South America, China, Japan, West Indies, Mexico, Philippine Islands, Norway, Denmark and South Africa. Dealer representation recently was established in Assyria and Palestine. The new arrangement is expected to increase this business.

During 1924 Franklin export business was twice that of 1922 and equal to that of 1923. Shipments to Yokohama increased despite the earthquake.

## Seiberling Declares Three Dividends on Preferred

AKRON, Jan. 7—Directors of the Seiberling Rubber Co. have authorized the payment of a 6 per cent cash dividend on the company's preferred stock. This will take care of accrued dividends on the company's senior issue up to April 1, 1923.

It is understood that the policy the company is pursuing will wipe out all back dividends this year. Checks were sent out Oct. 15 to pay deferred dividends up to July 1, 1922.

New dividends are payable, 2 per cent, Jan. 15, to holders of record Jan. 5; 2 per cent Feb. 15 to those of record Feb. 5, and 2 per cent March 16 to those of record March 6.

The company's common stock is expected to be in line for dividends after payments on the preferred are completed.

## Adams to Concentrate at Syracuse Plant

SYRACUSE, N. Y., Jan. 7—In an effort to effect economy in operation and increasing efficiency, it is understood that the Adams Axle Co. soon will abandon the plant at Findlay and enlarge the Syracuse plant for its entire production.

The company probably will employ at least 1000 persons when the two plants are consolidated and will manufacture all gears for Durant Motors, Inc., at the local plant. At present the Adams Axle Co. plant here is making axles for the Star cars only, while the New Process Gear Co. here is making gears.

## Demand to Cause Schedule Increases

**Gradual Improvement as the Season Advances Foreshadowed at Show**

NEW YORK, Jan. 3—The New York show, opened to the public on Saturday night, after two days were given over exclusively to trade attendance, drew larger crowds than a year ago, indicating sustained interest in automobiles and presaging an uptrend in sales. This forward movement may not become evident immediately but a gradual improvement in demand is forecast as the season advances.

The cars on display at the show present even better value for the money than in previous years, and the public appears to recognize this. An unusually large number of new models are exhibited, the closed car predominating in most instances. It is apparent that the closed car has gained in popularity to the extent that manufacturing facilities will be devoted largely to that type in the future. Manufacturers see only a limited demand for the open car.

Several price changes were made on the opening night of the show, the most outstanding occurring in the higher priced lines. General stabilization of the price situation will be made before the show ends, removing the important factor of price uncertainty as a sales resistant.

### Increase to Be Steady

Manufacturers will increase schedules due to the demand coming from dealers, although there will be no marked spurt immediately toward capacity operations on the part of the majority of the producers. The real buying by consumers is not expected to develop until the show season has lengthened and exhibits are held in the smaller communities of the country. This will bring the active buying season toward March, for which dealers are now preparing themselves.

The trade is not loading itself with cars but is placing only such orders as will take care of a gradually increasing demand, and manufacturers will continue to govern their operations accordingly.

Optimism for a good year prevails among the trade and indications are that manufacturers will attempt to make the year more profitable for them than was last year. Few estimates have been advanced by manufacturers attending the show as to the extent of plant operations during the next twelve months, but such estimates as have been given compare the outlook for factory activities favorably with those of last year.

Parts and accessories elicited much interest on the part of manufacturers, as well as by the consuming trade, and orders were placed by a number of factory executives. On the trade days this part of the show was widely visited



## Exporters Discuss Foreign Trade Fields

Foreign Sales, They Conclude,  
Will Constitute Large Part of  
Future Volume

NEW YORK, Jan. 8—That export automotive sales, including cars, trucks and accessories, are on the increase and in the future will compose a large part of the sales volume of American manufacturers, was emphatically brought out at the export trade day conference held in conjunction with the silver anniversary show.

Four hundred exporters and automotive men interested in exporting attended the meeting, which was held under the joint auspices of the Motor and Accessory Manufacturers Association, Overseas Club of the Automotive Boosters International and *The American Automobile* (Overseas Edition) and *El Automóvil Americano*.

Discussing the subject, "How the Car Exporters Have Paved the Way for Accessory Sales," James D. Mooney, president of the General Motors Export Co. and the Overseas Motor Service Corp., said that cars are intensely desired in practically all territories, and intelligent cultivation of the foreign market will bring results.

### Business Ethics Abroad

Mr. Mooney added that many markets abroad, however, can be approached only by manufacturers using the same business ethics and principles so essential in this country. A principle of common sense will bridge the gaps which may be open on account of unavoidable differences existing in the way the different people handle business details and react to business proposals.

"The Automotive Picture Abroad" was presented by George E. Quisenberry, editor of *The American Automobile* (Overseas Edition) and *El Automóvil Americano*, who told by pictures and charts how automobile use is growing throughout the world. The charts clearly indicated what a high percentage of automobile registrations in all countries is made up of American cars.

The pictures, which were widely representative, portrayed new roads of modern construction, recent motor exhibitions in the larger centers and service stations, shops, garages, filling stations, dealer establishments, etc., which would do credit to such places of business in any city in the United States.

### Financing of Exports

J. F. Kelly, Jr., export manager, Electric Storage Battery Co., explained "How to Handle and Finance the Export Orders" and clearly showed the many phases of this important work by a series of stereopticon views. He showed various forms of billing, invoices, manifests, etc., necessary to transact properly

business with firms abroad and also a set of pictures which told the story of how to pack and ship.

"What Export Sales Have Meant in Profits to My Company" was the subject of F. B. Caswell, vice-president and sales manager, Champion Spark Plug Co. Mr. Caswell indicated what a large volume of business his company had done in the foreign field and how this field may be cultivated to bring profitable results by other manufacturers, if common sense lines of dealing are complied with. His business slogan was: "Know the product and know the market."

### Valuable Foreign Markets

Percy Owen, chief of the automotive division of the United States bureau of foreign and domestic commerce, spoke on "The Field in Europe" and told what valuable markets exist in the countries of Europe. Backing up his statements by facts of actual conditions as he saw them on his recent trip through nine European countries, he presented a clear picture of the opportunities which exist in Europe for automotive sales.

R. N. Budd, a jobber of Sydney, Australia, brought to the meeting some fundamental facts which American automotive exporters should know about the markets in his country in order to carry on intelligent business transactions.

## Trippensee Is Elected a Rickenbacker Director

DETROIT, Jan. 7—Frank Trippensee has been elected a director of Rickenbacker Motor Co., succeeding B. L. Comber. All other directors and officers were returned.

The Rickenbacker company has acquired complete control of the Trippensee Closed Body Corp. through exchange of Rickenbacker stock for the entire 145,000 shares of \$10 par of the Trippensee company on the basis of one for one.

The Rickenbacker company has been heavily interested in the Trippensee company since it was formed a year ago through the combination of the former Trippensee company and the Everitt body trimming and finishing interests.

### Dividend Action Deferred

DETROIT, Jan. 7—In a letter to stockholders B. F. Everett, chairman of the directors, says that the Rickenbacker Motor Co. has deferred action on the 2 per cent dividend due at this time. In his letter he said, in part:

Your company has had a very successful year. We have enjoyed prosperity and have been able to pay dividends amounting to 6 per cent on our securities. This has been and will be the one policy of the company as long as dividends can be paid out of earnings.

The automobile business is a seasonable business and your company will need all the money it has at its command for the next four months, so that in the future our dividends will be paid semi-annually, the dates of payments being July 1 and Jan. 1.

We would recommend that all our stockholders retain Rickenbacker securities and ignore circulated rumors.

## Mission from Mexico Enthralled by Show

Visitors Brought Here by N. A.  
C. C. Report Republic Wants  
More Automobiles

NEW YORK, Jan. 8—For the first time in the twenty-five years of the show, an organized body of automotive representatives attended from another country. This was the Mexican Automotive Mission, brought to New York as a result of the N. A. C. C. efforts to foster motor development in other nations.

Composed of distributors and dealers from various sections of Mexico, as well as government representatives, the mission spent the entire week at the show. Several meetings and gatherings were held in honor of the visitors, and signal attention was paid to them at such annual events as the Chamber and the M. & A. M. dinners.

The Mexican party, which was organized jointly by George F. Bauer of the chamber and Gustavo Alana, automotive publisher of Mexico City, brought to the show a general report that motor sales were gradually expanding throughout the Mexican republic. The belief was expressed that the present administration was a business one and that stabilized conditions were developing.

### New Sections Opened

The economy program, just instituted, would have an influence in decreasing highway expenditures, but local and regional highway activities, engendered by enlarging motor use, were opening up many sections to a wider field for road transportation, it was stated.

Highways and retail financing were the chief subjects discussed at the special meeting at the chamber headquarters on Wednesday morning. Export executives of the various companies were in attendance. This meeting replaced the usual export conference.

The mission included, in addition to Mr. Alana, the following: Joaquin Madrid, Jose Ortiz Monasterio, M. S. Leishman, J. Sewell, Stanley Copeland, Thomas McManus, F. S. Canton, W. S. Benbow, Luiz Guezara and Agustin Diener of Mexico City; J. B. S. Mennet and W. A. Ward of Tampico, and William K. Boone of Jalapa.

## Studebaker to Go to Full Production in February

NEW YORK, Jan. 5 — Studebaker Corp. is making a physical inventory of its dealers' stocks this week. It is expected that stocks will be shown to be 25 per cent lower than shown by dealer reports. The plant is now closed for inventory, but will reopen Jan. 15 and will swing into full production in February.

Total production of the industry in 1925 is predicted by officials as not likely to exceed the 1924 figure.

## NOTES OF THE NEW YORK SHOW

**T**HERE were women attending the show on both trade days, but they were not there as representatives of the general public. With the exception of a few cases where they were the wives of dealers, they were themselves actual, bona fide dealers.

**T**HE decorations of the show were exceptionally brilliant, with the tower of silver, a modified form of the Tower of Pharos, the outstanding feature. It is built in sections and as soon as the New York show closes its doors will be taken apart and moved to Chicago, where it will be set up in the Coliseum for the national show there. Four inscriptions are on the tower, one on each face:

**"To the Automotive Industry Whose Record**

**"In a Quarter of a Century Is Without Parallel in History."**

**"To the Master Minds of the Automotive Industry**

**"Which Have Contributed so Largely to America's Greatness."**

These were written by show officials. These two inscriptions were written by high school pupils who received prizes:

**"To Honor Those Who Have Made Our Motors**

**"Like Our Country, Progressive and Supreme."**

**"In Grateful Recognition of Those Men Who Have Made Highways of Byways."**

Multi-colored lights play on the tower throughout the day and evening. At 9 o'clock each evening all other lights in the Armory are extinguished, so that the full lighting effects on the tower may be seen to best advantage.

There is a cornerstone to the tower. It was laid, with all due ceremony, prior to the opening of the show in the presence of Sam Miles, show manager, Alfred Reeves, general manager of the N. A. C. C.; G. Hall, representing the M. A. M. A.; D. J. Barrett, representing the Bronx Automobile Dealers Association; Harry Bragg, secretary of the Automobile Merchants' Association, and Tom Miles, Edward F. Korbel, Charles Elias, William Stirn, Philip Goldsmith and other members of the show staff. Col. E. F. Austin, of the 258th Field Artillery, assisted by Mrs. Reeves, officiated. Before it was sealed up there were placed in it copies of all the New York newspapers of Dec. 23, the current issue of the handbook of gasoline automobiles, the current automobile publications, pictures of the first automobile show in Madison Square Garden in 1900, diagrams of the present show and figures covering the progress of the industry throughout its history.

After being laid, the strong box was taken to Sam Miles' office and it will re-

### PAID ADMISSIONS

#### FEW FIRST DAY

**NEW YORK, Jan. 7**—The show almost established a record in the number of paid admissions on the opening day.

"If it hadn't been that a fee was charged in one or two exceptional cases," said Sam Miles, veteran show manager, "this would have been the first time in the history of the national automobile shows when not a single paid admission was reported on the first day."

This was due to the fact that the first day was a "trade day," when only the trade was admitted upon the presentation of proper credentials and without the payment of a fee.

pose in his custody until 1950, when the golden jubilee will be celebrated and Mr. Miles will be on hand personally to open it.

The turret of the tower revolves. Its sides are of different colors, graduating from black to yellow. This is symbolical of the emerging of the industry from darkness 25 years ago to dawn, today.

**ELWOOD HAYNES**, one of the pioneers of the industry, recalling old times, says that the circus antedated the automobile shows four years as a place for exhibiting new cars. In 1896, four years before the first automobile show was held in New York, he leased one of the early Haynes cars to the John Robinson circus. The vehicle was carried through the season as one of the main features of the parade. At the Ohio State Fair, in the fall of the same year, three Haynes cars were exhibited.

**M**OVIES were shown in the Concert Hall of the Armory beginning Monday night. Two films were shown, "Play Safe" and "The Road to Happiness," both dealing with safety on the highways. They were displayed continuously throughout the week.

**O**NE of the prominent car manufacturers made good use of the early hours of the first trade day when the blizzard kept attendance down to a minimum and gave him a good opportunity to look around for himself. He sat himself comfortably in his own car, measured the head room with his hand, saw what the leg space was and, satisfied on these points, made visits to cars in neighboring booths, where he went through the same procedure. Not only he did this but so did others in his party, all of them identified with executive work.

**A**N exhibit that attracted much attention and favorable comment was that in the Buick booth where the Master "6" and the Standard "6" chassis were placed on top of each other. This was done not because of the desire to make every inch of space in the booth count, but so that trade and public could see exactly wherein the two chassis differed, and so that they could compare every detail.

### Show Travel Taxes

#### Railroad Capacity

**NEW YORK, Jan. 5**—Some of the railroads running into New York broke all records today because of the incoming of persons to attend the automobile show. The tracks had been cleared of snow, and the inrush, somewhat delayed since Saturday, became unusually heavy.

The New York Central ran 17 extra sections on its through trains to bring in visitors from the West. The Twentieth Century Limited was operated in ten sections.

On the Pennsylvania Railroad fast trains from the South and West were run in several sections, and extra cars were put on others.

From Boston and other New England points the New York, New Haven & Hartford reported extraordinary traffic, necessitating extra cars in virtually all trains.

### Eisemann Magneto Corp. Acquires Duplex Engine

**NEW YORK, Jan. 6**—Arrangements have been completed by the Eisemann Magneto Corp., manufacturer of electrical equipment, for the acquisition of the automobile business of the Duplex Engine Governor Co. The entire stock of raw and finished materials, special machinery and facilities for manufacture has been transferred to the Eisemann plant, and it is expected that but a slight interruption in production will result.

Both the Simplex and Duplex models will be continued. Production is being organized and plans made for marketing a new development turbine governor.

W. T. Tabb, chief engineer; H. G. Adler, assistant chief engineer; J. Geshelen, production superintendent; A. Johnson, service engineer; W. Gartner, chief draftsman, together with a staff of specially trained workmen, have been taken over by Eisemann.

### ZAPON COMPANIES MERGE

**NEW YORK, Jan. 5**—The Celluloid Zapon Co., manufacturer of lacquer and lacquer enamels, has absorbed the Zapon Leather Cloth Co., and the resulting firm is operating under the name of the Zapon Co. The change is in name only, as the personnel remains the same.



## General Tire Earns \$37.50 on Common

**Report for 1924 Shows a 50 Per  
Cent Gain in Sales—Addi-  
tions Under Way**

AKRON, Jan. 7—At the annual meeting of the General Tire & Rubber Co. William O'Neil, president, submitted a report showing a 50 per cent increase in sales, a 25 per cent gain in profits and earnings equal to 75 per cent on the common stock. Expressed in dollars, the earnings amounted to \$37.50 a share, as against less than half that amount shown by the most favorable report of any other company of the kind for 1924, according to the statement.

In his remarks to stockholders President O'Neil said sales for the year were \$13,152,000 and the profits \$1,500,000. "There is a special reason for our favorable showing," he remarked. "We do not make any more on an individual sale than any competitor, perhaps, but our fixed investment is held so efficiently low that this year we had nearly fifteen times turnover of sales against fixed investment."

"The company that comes nearest to us in efficiency has a fixed investment so large that its sales were turned but three times during the year, compared to our 14. The fact that we have earned \$37.50 for each share of common stock and have increased our surplus from \$876,152 to \$1,876,766, besides taking care of necessary expansion expenses, speaks for itself. We have absolutely no bank debt."

"General Rubber depends entirely upon dealers' business for income. General remains the only tire company that has never omitted a single dividend payment, in cash, since it began existence."

Continuing, Mr. O'Neil said the company has three more additions under way and that 1925 capacity will be increased 50 per cent.

Officers were re-elected as follows: M. O'Neil, chairman of the board; William O'Neil, president and general manager; W. E. House and C. J. Jahant, vice-presidents; T. F. O'Neil, secretary; Charles Herberich, treasurer, and W. J. Cahill, assistant secretary.

## N. A. C. C. to Study Truck Cost Figures

(Continued from page 76)

not only competent, but are moreover sufficiently interested in this problem to do the job thoroughly and impartially.

G. C. Woodruff, general freight agent of the New York Central Railroad, talking of "The Railroads and the Motor Truck," urged that truck manufacturers help restrain uneconomic competition from irresponsible operators by refraining from making sales on the basis of too optimistic operating cost estimates and too long time payments. He voiced his appreciation of the value of the

motor truck as a transport medium and told of various ways in which it is being employed successfully by his company.

In a paper read by Gordon Lee, Frank R. Fageol predicted a bright future for the motor bus and urged that the full facts regarding its social and economic value be spread abroad, that legislation regarding buses may be fair and equitable.

Edward F. Loomis, secretary, N. A. C. C. Motor Truck Committee, proposed that the chamber collect motor bus production figures in the future, segregating them from truck statistics, in which they have been included heretofore. The suggestion met with the approval of the members and will be carried into effect. Mr. Loomis outlined the purpose and results of the recent N. A. C. C. New England Motor Transport Conference and asked the members to consider the possibility of other similar meetings.

## Court Rules Mail Trucks Must Observe Laws

WASHINGTON, Jan. 6—Following many months of litigation, the Post Office Department in the United States Court of Appeals lost the case in which it would prohibit interference by the police departments of various cities with trucks that are engaged in the collection of mails. None of the mail trucks is equipped with starters. As a result mail truck drivers leave their engines running, which is contrary to police regulations in practically all cities.

It was contended by the department that inasmuch as the average truck made from 80 to 160 stops a day that the cranking process would cause endless delay if the engine had to be started by hand at each mail box.

The court's decision, reaffirmed in the upper court, was that an unattended motor was dangerous to life and property and that mail drivers must stop their motors at each box where they alight.

The decision will mean that the department must purchase thousands of dollars' worth of equipment for the 4800 mail collecting trucks as soon as the Congress provides the money.

## Franklin Plans Appeal from Moskovics Verdict

SYRACUSE, Jan. 7—An appeal will be filed in the Federal Court from the verdict of \$158,833 in favor of Frederick Moskovics against the H. H. Franklin Manufacturing Co. of this city in the event the judgment is entered, according to L. Earl Higbee, counsel for the automobile concern, in an argument before Judge Frank Cooper, Saturday.

Counsel for the Franklin company made a motion to set aside the verdict on the ground that it was excessive and against the weight of the evidence. Judge Cooper ordered counsel to file briefs and will give a decision soon. Judgment has not yet been entered, and appeal cannot be taken until it is.

## New Jersey Issues Motor Bus Rules

**New Specifications in Many Re-  
spects Are Like Those of  
S. A. E.**

TRENTON, Jan. 6—Specifications applicable to motor buses within the jurisdiction of the Public Utilities Commission have been promulgated by that body. With one exception, relating to emergency doors, the subject of an order issued Dec. 18, last, the new regulations will be applied to all buses placed in operation hereafter, whether as substitutes for existing buses or otherwise.

The emergency door provision covered by the board's previous order is applicable to all buses under its jurisdiction, and the regulation must be made effective within 90 days. The new specifications are the result of a study of the subject made at the instance of the commission and agree in many respects with those formulated by the Motor Coach Committee of the Society of Automotive Engineers.

As promulgated by the commission, the specifications follow:

1. **Body Specifications.**—That a maximum length of body of 24 ft. and a minimum of 16 ft. in length over all be adopted. That a maximum width of 8 ft. and a minimum of 7 ft. outside measurements, and a maximum inside clearance of 6 ft. 6 in. and a minimum inside clearance of 6 ft. 4 in. be adopted.

The length of the body may be subject to reduction by municipal authorities where in their judgment operating conditions require modification.

2. **Window Guards.**—That suitable protection shall be provided to prevent seated passengers from inadvertently extending their arms or heads through open windows.

3. **Guard Rail.**—That each bus be equipped with a suitable guard rail to prevent passengers from obstructing the view of the driver.

4. **Partition Behind Driver.**—That a partition be constructed of wood and glass and located behind each driver's seat and so constructed as to permit proper ventilation at the top.

5. **Width of Door.**—That there shall be a minimum clearance of at least 24 in. on the entrance and exit doors of a bus.

6. **Emergency Door.**—That all motor buses shall be provided with an emergency door located in the center rear. The door shall have a minimum clearance of 18 in. and extend from the floor to the upper belt panel.

(a) All emergency doors shall be conspicuously marked "EMERGENCY DOOR."

(b) Provision shall be made whereby emergency doors may be readily opened by passengers in case of emergency.

(c) The rear of the bus shall be constructed so that no permanent obstruction will interfere with the passage of passengers through the emergency door.

(d) The rear frame of the bus shall be so designed and constructed as to minimize as far as possible rendering the emergency door inoperative in case of accident.

7. **Panel.**—That the construction of the front end of motor bus bodies shall be such as to afford the driver an unobstructed

(Continued on page 92)

## FINANCIAL NOTES

**E. S. Evans & Co., Inc.**, Class A stock to the amount of 40,000 shares was offered at \$25 a share, \$5 par, by Paul H. Davis & Co. and John Burnham & Co., Inc., Chicago. The Class A stock is entitled to cumulative dividends at the annual rate of \$2 a share. After this is provided for Class B stock is entitled to non-cumulative dividends of \$2 per share, after which further distributions of dividends shall be divided between both classes. Directors have signified their intention of placing the stock on a \$2 basis, the initial quarterly dividend of 50 cents a share to be payable on or about April 1. Net earnings after taxes in 1924 were \$303,187, against \$303,187. This was after charges, but before provision for amortization of patents and licenses.

**Timken-Detroit Realty Co.** first mortgage 6 per cent serial gold bonds to the extent of \$1,250,000, the total new issue, have been offered by Folds, Buck & Co. at prices to yield 5 to 6 per cent. The bonds mature Dec. 15, 1925-34 and principal and interest are guaranteed by Henry H. Timken and William R. Timken. Proceeds will be used in part payment for the purchase of manufacturing properties in Detroit. Cleveland and Canton from the Timken-Detroit Axle Co., which will lease, at least for the term of the bonds, the buildings in Detroit and Cleveland. The guarantors of the bonds own about one-half the outstanding common shares of the Timken Roller Bearing Co.

**Apco Manufacturing Co.** Class A stock, par \$25, has been offered by Henry D. Lindsley & Co., Inc., and Throckmorton & Co., New York, according to an announcement. The stock is entitled to an 8 per cent preferred and cumulative dividends per annum. After \$1 a share has been paid on the common it will participate equally with the common. Inauguration of dividends on an 8 per cent basis, according to the bankers' statement, is planned by the company on April 10. The company makes accessories in Detroit for the radio industry and for Ford cars.

**Colonial Motor Coach Co.** no par common stock to the extent of 24,900 shares has been offered by the Fiscal Service Co. of New York at \$32.50 a share. The company was incorporated in Delaware to manufacture buses and to acquire the New England Motor Transportation Co. and other bus operating lines in and around eastern Massachusetts. It has a capital of 30,000 Class A and 15,000 Class B common stock.

**Checker Taxi Co.** has notified the Massachusetts commissioner of corporations that it has increased its capital by issuing 5000 shares of \$10 par employees' special stock. It was stated that after the increase the capital would be \$1,300,000, represented by 50,000 shares preferred, 50,000 common A, 25,000 B and 5000 shares of special employees' stock.

**F. B. Stearns Co.**, manufacturer of the Stearns-Knight automobile, has declared a quarterly dividend of 37½ cents a share on the common, payable Feb. 1 to stock of record Jan. 25, a reduction from the rate of \$2 annually, paid for several years. Earnings for the year, according to the company's statement, were about \$540,000.

**Wickwire-Spencer Steel Corp.** reorganization committee has notified preferred and common stockholders that to obtain voting trust certificates representing stock of the new company in accordance with the plan they should deposit their stock with the reorganization committee as agent on or before Jan. 31, 1925.

**Spicer Manufacturing Co.** during last year paid off \$671,000 of its funded debts without new financing. According to an announcement, it now has a funded debt of only \$498,000, represented in 8 per cent bonds. The company manufactures universal joints axles, springs and frames for automobiles.

**Detroit Motor Bus Co.** have declared an extra dividend of 1 per cent and the regular quarterly dividend of 2 per cent, payable Jan. 15 to stock of record Dec. 31. On Oct. 15, 1924, a similar extra dividend was paid.

**Maxwell Motor Corp.** stockholders have authorized \$5,000,000 first mortgage 5½ per cent bonds, of which it is proposed to issue \$3,500,000 to refund debentures which have been called for payment at 105 Jan. 26.

**Black & Decker Manufacturing Co.** Dec. 31 paid an extra dividend of 2 per cent in addition to the regular quarterly dividend of 2 per cent on its common stock.

**Warren Brothers Co.** directors have voted to retire the company's issue of first col-

lateral 6 per cent bonds due March 1, 1926-27, on March 1, 1925, at 102½ and interest.

**Moon Motor Car Co.** has declared the regular quarterly dividend of 75 cents, payable Feb. 1 to stock of record Jan. 15.

## MEN OF THE INDUSTRY

## Horning Heads Waukesha

H. L. Horning, general manager and chief engineer of Waukesha Motor Co., has been elected president, which position he will assume at once. Mr. Horning has been a well-known figure in the industry for many years, and has been prominently connected with the Waukesha company during the largest part of his career.

## Hancock Elected a Director

John M. Hancock has been elected a director of the Kelly-Springfield Tire Co.

## Col. Scott Promoted

Frank A. Scott, past president of the Cleveland Engineering Society and president of the Warner & Swasey Co., has been appointed chief of the Cleveland ordnance district of the United States Army. His duties will involve the co-ordination of industries in Cleveland and Ohio for the production of munitions for national defense in time of an emergency. The new office carries with it the rank of Colonel, as Mr. Scott holds that rank in the Ordnance Officers Reserve Corps.

## Miller Chosen Chamber Head

Ralph B. Miller, general manager of the Service Parts Co., at the recent organization of directors of the Chamber of Commerce of Springfield, Ohio, was elected president. Mr. Miller was at one time cashier of the Farmers' National Bank and also county treasurer.

## Pollock Marmon Sales Manager

Melville A. Pollock, assistant advertising and sales manager of Rolls-Royce of America, Inc., who has been with the company since 1921, has resigned to become sales manager of the Nordyke & Marmon Co. of New York. His successor with Rolls-Royce has not been announced.

## Root Made Chamber Director

H. G. Root, president of the H. G. Root Co. and of the Ohio Auto Parts Co., has been elected a director of the Chamber of Commerce at Springfield, Ohio.

## ELECTRIC MEN MEET

NEW YORK, Jan. 7—Additional funds were appropriated to carry on educational work regarding electrical service at the meeting of the Automotive Electric Association here Tuesday. The following officers were re-elected to serve during 1925: A. D. T. Libby, president; C. O. Miniger, vice-president; A. O. Bartsch, vice-president; R. J. Nightingale, vice-president, and George S. Cole, secretary and treasurer.

S.A.E. to Discuss  
New Car DesignsAn Instrument for Measuring  
Noises to Be Among Features  
at Convention, Jan. 19

NEW YORK, Jan. 8—The program has been issued for the winter meeting of the Society of Automotive Engineers to be held in the General Motors Building, Detroit, Jan. 19 to 22.

During the four days the society is in session there will be papers of great interest to men concerned with the design and production of chassis, engines, bodies, tires and airplanes and to those engineers who are primarily concerned with laboratory research work.

Among the novel material will be a new instrument for measuring noises developed in a car, one for recording vibrations of an engine and chassis, a transparent carburetor in which dust can be seen passing through and a rubber crankshaft of full six-throw size that will illustrate how a shaft bends.

Motion pictures will show how a car shimmies and gallops and will take the spectators for a trip through a pressed steel body manufacturing plant. Much of the program is devoted to the subject of balloon tires, front wheel wobble or shimmy, steering mechanisms and front-end layout.

Three papers on bodies will be read, one on pressed steel body construction, one on light, flexible fabric bodies as produced in Europe and one on the practice of the custom body builder. Steam cooling methods for internal combustion engines will also be discussed.

The program for the meeting follows:

- Jan. 19. 2.30 p.m.—Standards Committee meeting.  
Jan. 20. 9 a.m.—Registration and reception.  
10.30 a.m.—Report of Research Committee. Research instruments and apparatus.  
2.30 p.m.—All-metal airplane design and latest developments in aircraft engines.  
All-metal body construction.  
7.30 p.m.—President's address. Engine vibration.  
Jan. 21. 9.30 a.m.—Analyses of wheel shimmy. Steering system forces and stresses.  
2.30 p.m.—Balloon tire design. Experience of car manufacturer with balloon tires.  
Relation of these tires to wheel shimmy. Fabric body construction. Custom body builder's effect on standardized body construction.  
9 p.m.—Carnival at Oriole Terrace.  
Jan. 22. 10.30 a.m.—Results of air cleaner and road and field dust investigations.  
2 p.m.—Foreign materials in engine oil. Crankcase oil dilution.  
8 p.m.—Vapor cooling of automobile engines.

## LOWNEY GOES WITH INDIA

AKRON, Jan. 6—E. C. Lowney, formerly connected with the credit and treasury department of the Firestone Tire & Rubber Co., has joined the India Tire & Rubber Co., where he is to be associated with the treasurer, Mr. Searles, in supervising credits.



## Union Drawn Steel Buys Frasse Works

### Acquisition Gives Beaver Falls Company a Chain of Five Plants

BEAVER FALLS, PA., Jan. 7.—To meet conditions which have arisen in the cold drawn steel industry since the abolition of the Pittsburgh plus plan the Union Drawn Steel Co. of this city, has purchased outright the plant and holdings of the Frasse Steel Works, Inc., at Hartford, Conn. The deal became effective at the start of the year.

The acquisition of the new property gives the Union Drawn Steel Co. a chain of five cold drawn steel plants, so distributed over the industrial sections of the country as to permit of good service to all consuming centers.

The output of the Hartford plant will be used to serve the New England and Eastern trade; the Gary, Ind., mill will supply the Western consumers, including the large agricultural trade; the output of the Hamilton, Ont., plant will be devoted to the Canadian users, while the two main plants at Beaver Falls will serve the demand for cold finished products in the central territory, which embraces the automotive and allied industries.

The company also owns and operates warehouses at Detroit, Chicago, Cincinnati, New York and Philadelphia.

The Hartford Works is said to be the largest cold finishing plant in the East, having a capacity of upward of 30,000 tons annually. It was built in 1916 by the Frasse Steel Works, Inc., chiefly to supply the warehouses of the Peter A. Frasse Co., Inc., as well as New England consumers.

Products of the Hartford plant include a full range of sizes of cold drawn and turned and polished steels, as well as a complete line of special shapes. The plant also has a well equipped heat treating department. Installation of additional equipment for cold finishing purposes is contemplated.

### Vacates Decree Against Apex Making Cleaners

CHICAGO, Jan. 6.—An order has been entered by Judge Wilkerson of the United States District Court, Chicago, vacating a decree under which it was held that the Apex Electric Manufacturing Co. of Chicago, in manufacturing and merchandising an automatic windshield cleaner, had infringed the patent rights of the Folberth Auto Specialty Co. of Cleveland.

The decree also carried an injunction restraining the Chicago concern from further exploitation of the device in question. Judge Wilkerson has set Jan. 12 for hearing the Apex company's motion

involving damages said to have been suffered in consequence of the litigation.

J. Prince, secretary of the Apex company, stated today that his company again is in production on its automatic cleaner after a suspension of several months in the manufacture of this device. The court order did not affect the company's various other products.

In its action against the Apex company, Folberth claimed exclusive right to manufacture any type of automatic windshield cleaner, the motor of which is operated by the suction of the automobile engine's intake manifold.

In the case of Apex it was contended that a cylinder and piston type and diaphragm type cleaner were infringement upon the Folberth patents.

## INDUSTRIAL NOTES

Detroit Dye Casting Co., manufacturer of die castings, small stampings, tools and jigs, has incorporated with a capital of \$50,000, with the following officers: Clemons H. Davis, president; Lovell R. Kraus, vice-president; Hugo Miller, secretary-treasurer; Owen R. Baker, general sales manager and E. Martin Tallberg, factory manager. The company also manufactures the Kanteak die cast aluminum curtain light frames.

Premier Manufacturing Co. of Detroit has purchased the Detroit Battery Charger Co. of that city and will operate it under that name as a separate division. The Detroit Battery Charger Co. has been engaged in manufacturing two types of chargers, a large one for automobile service station work and a small one for home charging.

Boyriven, Inc., announces that it has sold its stock of upholstery cloths, carpets, curtain silks and seat cover cloths to Wm. Wiese & Co., New York, which firm also will represent Boyriven, S. A. Paris, for the sale of imported automobile upholstery cloths.

Husky Wrench Co. of Milwaukee has opened an export office at 280 Broadway, New York, and appointed Benjamin Hacker export manager, to take care of foreign distribution of "Husky" interchangeable socket wrenches.

### C. G. Wridgway, Veteran of Industry, Dies in Paris

PARIS, Dec. 31 (by mail).—Charles G. Wridgway, secretary of the Sunbeam, Talbot, Darracq Syndicate, died here on Dec. 24, after a very brief illness at the age of 51.

Mr. Wridgway, who has had a long connection with the automobile industry, was Peerless agent in New York nearly 20 years ago, and in 1905 he made the then record performance of driving more than 1000 miles in 24 hours on the old Brighton Beach track.

For a time he was responsible for Studebaker sales in England, and before joining the Darracq Co. in France was connected with Crossleys of Manchester.

### 1924 BEST YEAR FOR OLDS

LANSING, MICH., Jan. 7.—Olds Motor Works in 1924 completed the most successful year in its 27½ years of automotive manufacturing. During the year domestic sales of Oldsmobiles increased one-third, and three times more cars were sold to foreign buyers than in 1923. Greater gains are expected for 1925.

## METAL MARKETS

So far as the iron and steel market as a whole is concerned, the change from 1924 to 1925 has not altered conditions. Last Thursday's holiday, together with inventory taking, was expected to make for a temporary slowing up of orders, but inquiries and pending negotiations show that there is still considerable business overhanging the market.

Makers of automotive steels have become accustomed to worth while orders hanging fire until after the National Automobile Show is out of the way. The rate at which passenger motor car builders will buy steel during the year's first quarter will to a considerable extent determine the market's course, at least so during the year's first half.

Statisticians may place the automotive consumption of steel at 10 or 12 per cent or less of the total. The fact remains that it constitutes the margin of difference between a good and a poor steel year.

Sentiment in both the pig iron and steel markets is decidedly bullish. Not only have prices for semi-finished descriptions of steel tightened further, but sheet rollers are not all anxious for fresh business until after advances which they confidently look forward to have come to pass.

Optimists see capacity operation of mills assured way into May. Sobering influences, however, are at work to prevent prices from going too high. In this connection, recently announced reductions in passenger motor car prices have had a salutary effect.

It is freely conceded that prices are due for a modest rise. If held within proper bounds, such upward revision should have little effect on the volume of demand.

What the more conservative producing interests fear and what they are bending every effort to prevent, is that the upward movement, once begun, will get beyond their control, and undermine the market's health, which has never been more robust than at the beginning of the new year.

Pig Iron.—Blast furnace interests are waiting for the crystallizing of another pronounced buying movement before pushing sales more vigorously. Restraining influences in a possibly too swift pace toward higher prices are not wanting. Quite a little European iron has been contracted for to arrive during the year's first half, and this will eventually enter consumption at \$1 a ton or more below whatever the domestic price may be at the time. Relatively light as this competition may be at this time, its sudden growth in the event of steep advances would be highly probable.

Aluminum.—This metal seems to be marking time pending some move with reference to price on the part of the domestic producer. Most of the metal allotted by European producers to the American market during the first half of 1924 appears to have been absorbed by contracts. The European market situation seems to be a shade easier, but not sufficiently so to make for any radical change in the metal's market position. New clippings and remelted metal are moving in routine fashion to foundries.

Copper.—Large producers do not share Wall Street's opinion that 15c. copper will bring out much new production. Statistics show that the copper industry now has the war's vicissitudes definitely behind it, and that a steady at around present prices will develop is the general opinion of the trade.

Zinc.—The market continues steady.

### M. I. Wilcox Sells Top Business to Chapman

TOLEDO, Jan. 5.—Leo Chapman, for many years in charge of the automobile top department of the M. I. Wilcox Co., this city, has purchased that part of the business and will continue and extend the business under the name of the Chapman Manufacturing Co.

In addition to manufacture of automobile tops, seat covers, curtains and upholstery, he will carry a complete line of accessories.

The M. I. Wilcox Co. was originally a ship chandlery here and will continue its business of builders' hardware.

# Calendar

## SHOWS

- Jan. 17-24—Cleveland, Annual Automobile Show.
- Jan. 23-31—Chicago, National Automobile Show, under the auspices of the National Automobile Chamber of Commerce, Coliseum and First Regiment Armory. Open to the public except on Jan. 23 and 24, which are trade days.
- Jan. 25-31—Chicago Annual Automobile Salon.
- Feb. 7-14—Kansas City, Mo., Annual Automobile Show.
- Feb. 9-14—New York, Eleventh National Motorcycle, Bicycle and Accessory Show, Seventy-first Regiment Armory, under the auspices of the Motorcycle and Allied Trades Association.
- Feb. 21-28—San Francisco, Pacific Annual Automobile Show.

March 7-14—Boston, Twenty-third Annual Automobile Show.

March 8-14—Vienna, Spring Fair.

March 20-29—Geneva, Switzerland, Second Swiss International Motor Exhibition.

April 1-17—Sydney, Australia, Royal Agricultural Show. Embraces automobile exhibits.

April 22-May 7—Melbourne, Australia, International Automobile Show, under the auspices of the Chamber of Automotive Industries, in conjunction with the Royal Automobile Club of Victoria.

June—Rio de Janeiro, Brazil, Rio Automobile Show, originally scheduled for October, 1924, but postponed for more extensive arrangements.

## RACES

July 26—Paris, Montlhéry Track, French Grand Prix.

## CONVENTIONS

Jan. 26-29—Chicago, Eighth Annual Convention of the National Automobile Dealers Association, Hotel LaSalle.

June 22-27—Summer convention of the Automotive Equipment Association at the Broadmoor Hotel, Colorado Springs, Colo.

## S. A. E. MEETINGS

Jan. 15—Indiana Section, Lubrication and Crank Case Dilution, S. W. Sparrow of the U. S. Bureau of Standards.

Jan. 19—Cleveland Section, Preparation of Fuel Char-

ges and Detonation, Arthur H. Denison, Weger Motor Co., Old Colony Club, Hotel Cleveland.

Jan. 20-23—S. A. E. Annual Meeting, Detroit.

Feb.—Indiana Section, Automobile Finishes.

Feb. 16—Cleveland Section, Electrical Instruments and Measuring of Chassis Tests by Means of Them, J. H. Hunt, General Motors Research Corp., Old Colony Club, Cleveland.

March—Indiana Section Developments in Transmission.

March 16—Cleveland Section, Road and Riding Ability, Harry Horning, Waukesha Motor Co., Old Colony Club, Hotel Cleveland.

April 9—Indiana Section, Talk by F. E. Hunt, head of electrical division, General Motors Research Corp.

## New Jersey Issues Motor Bus Rules

(Continued from page 89)

vision to the right and left. A small opening must be placed on the left-hand side of driver to provide for signalling purposes.

8. **Handles.**—That rails or grab handles must be located inside the vestibule of the bus and firmly secured by some means other than wood or lag screws.

9. **Grab Handles for Standees.**—That all buses be equipped with hand rails suspended from the ceiling with sanitary fireproof straps attached, except where handles on cross seats are used.

10. **Ventilators.**—That buses be equipped with ventilators of a suitable type to assure proper ventilation.

11. **Heating System.**—That a suitable heating system be installed.

12. **Gasoline Tanks.**—That no bus shall be operated with the gasoline tank located inside the body of the bus; the tank must be separated from the body by fireproof material and the floor directly over the tank should also be protected by fireproof material.

13. **Mirrors.**—That every bus must be provided with an inside and outside mirror.

14. **Footboards.**—That the front footboards be constructed of metal, or if of wood, protected by fireproofing material.

15. **Fire Extinguisher.**—That each bus be equipped with a fire extinguisher, to be kept in proper condition and exposed to view, the same to be not less than one quart capacity and to bear inspection label of Fire Underwriters' Laboratories.

16. **Inside Lights.**—The interior lighting of buses shall be at least 5 rated candle power per seat passenger capacity, lamps to be so located as to provide an even distribution of lighting, and all buses shall be equipped with a step light. Lighting installation, including generator, shall be so designed that the lamps shall always burn at the normal brilliancy.

17. **Switch.**—That all buses shall be equipped with a lighting control switch of ample capacity.

18. **Stop Signal System.**—That a satisfactory stop signal system shall be installed.

19. **Stop Lights.**—That all buses shall be equipped with a stop light.

20. **Route Signs.**—Provision shall be made for a route sign so located that it may be read day or night from at least 100 ft. ahead

of the vehicle, and must not interfere with the driver's vision or produce an annoying glare.

21. **Overhang of Bus Body.**—That the maximum overhang of the motor bus body shall be in proportion of 7/24 of the total length of the vehicle.

22. **Chassis Frame.**—That the chassis frame be not less than ¼-in. stock and all steel where 6-in. channel is used and not less than 3/16 in. when 8-in. channel is used, measured amidship.

23. **Height of Chassis Frame.**—That the maximum height of motorbus frames from the ground to the top of the chassis frame shall be 35 in. when measured without pay load.

24. **Distance That Each Body Should Extend Beyond the Chassis.**—That the body shall extend at least the full length of the chassis frame and in no case more than 10 in. beyond the end of the frame.

25. **Bumper.**—That the rear bumper shall extend at least 4 in. beyond the body limits and be attached to the chassis.

26. **Brakes.**—That all motor buses shall be equipped with not less than two sets of brakes, one operated by a hand lever and the other by a foot pedal. Each set of brakes shall be capable of holding the vehicle when fully loaded and on a 15 per cent grade.

27. **Tires.**—That no bus shall be operated with solid rubber tires. This is not intended to exclude the use of cushion tires.

28. **Wheel Housing.**—That wheel housing be built for standard equipment, reinforced with at least 12 gauge sheet metal or its equivalent in tensile strength. The construction of the mud guard shall be such that no undue accumulation of dirt or foreign matter can be deposited on the body.

29. **Exhaust.**—That the exhaust pipe shall be extended to the rear end of the bus.

## South Carolina Men Seek Bus Regulation

GREENVILLE, S. C., Jan. 6—Representatives of the motor bus industry will go before the Legislature to ask for the regulation of bus operation in the State, according to A. F. Nicholl, assistant secretary of the South Carolina Bus Association. The association is said to embrace 90 per cent of the bus men of the State.

## Warehouse to Hold 6800 Automobiles

CHICAGO, Jan. 5—The La Salle Auto Storage Co. of Chicago has commenced construction of a new automobile warehouse, which officials say will be the largest exclusive building of its kind in the United States. The new storage plant is being erected at La Salle and Twenty-fifth Streets, three blocks distant from the company's present automobile warehouse on La Salle Street.

According to I. Slavin, general manager of the La Salle company, the new warehouse will add 240,000 sq. ft. to the organization's automobile storage room and provide sufficient space for the housing of 3800 motor vehicles.

The present building can handle a maximum of 3000 cars, says Mr. Slavin, so that by April 1, when the new structure is expected to be ready for occupancy, it is estimated that the company will be prepared to shelter a total of 6800 motor vehicles in the two warehouses.

One of the outstanding conveniences in connection with the new plant will be a seven car free railroad switch, which will eliminate the necessity of leaving motor cars out in the weather during transfer from railroad cars to the warehouse. The building is to be of the mill-sprinklered type, with access to its four floors obtained by use of large, especially constructed elevators.

The company feels that the construction of the new warehouse, exclusively for accommodation of the automobile trade, will give Chicago a needed additional facility for housing motor vehicle stocks of local dealers. There has been urgent need here for more accommodations of this sort, especially for first class, dry warehouses located handily to the principal automobile retailing center.

The new La Salle plant, as well as the one already in use, is situated a short distance from Chicago's "Automobile Row" on Michigan Avenue.